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ABSTRACT

Presented are the proceedings of an environmental programing workshop on deaf blind individuals at which principles, techniques, and examples of behavior modification were discussed and demonstrated. Rules for data collection are given as well as explanations of the categorizing, the measuring devices, and the data sheets involved in behavior measurement. Basic principles of reinforcement, extinction, and punishment are discussed. Identified are the objectives of a film which contrasts an unstructured custodial program and a program which utilizes the principles of positive reinforcement, extinction, and punishment in an institutional setting. Explanations and specific applications of the following techniques are presented: shaping, fading, response chaining, modeling, imitation, reinforcement of incompatible behavior, time out, and response cost. Training and maintenance procedures specifically related to the following activities are examined: toilet training, hand washing, self care, dressing, eating, social behavior, aggressive behavior, stereotyped motor movements, and self abuse. Guidelines for instructing parents in homebased management techniques are provided. (GW)

ED 069057

ENVIRONMENTAL PROGRAMMING
FOR THE
DEAF - BLIND

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ENVIRONMENTAL PROGRAMMING WORKSHOP
FOR
STATE DEPARTMENT OF EDUCATION

SUMMER, 1972

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WORKSHOP SCHEDULE

WEDNESDAY

I Introduction
  A. Traditional Model
  B. Behavior Modification Model

II Data Collection and Behavior Measurement

III Small Group Discussion
  A. Introduction
  B. Data Collection

IV Film: "Learning"

V Basic Principles of Behavior

THURSDAY

I Reading and Writing Assignment: Basic Principles

II Small Group Discussion: Basic Principles

III Film: "Poppe Project"

IV Specific Applications of Behavioral Principles

V Film: "Behavior Modification: Teaching Language to Psychotic Children"

FRIDAY

I Treating Behavioral Deficits

II Treating Behavioral Excesses

III Small Group Discussion: Deficits and Excesses

IV Comprehensive Environmental Programming
  A. Token Economies
  B. In-Home Management

INTRODUCTION TO BEHAVIOR MODIFICATION

I. Critical issue is whether behavior is to be explained on the basis of (1) observable events or (2) mentalistic, unobservable explanations.

A. Scientific approach dictates that behavior theory be based on empirical data.

B. Applied areas such as Mental Illness and Mental Retardation also are best served by an empirical approach.

II. Medical Model Analysis of Abnormal Behavior

A. Abnormal behavior has an underlying cause. The cause cannot be directly observed.

B. Types of underlying causes:

(1) Physical - brain damage, glandular imbalance, etc. This type of cause is usually hard to clearly identify.

(2) Psychological - some unobservable mental state accounts for the abnormal behavior. Examples--split personality, disorganized ego, aggressive trait. Quite often psychological causes are proposed after medical analysis show no possible physical cause.

C. It is important to remember that these supposed causes are never directly observed, they are based on inferences derived from the patient's behavior.

D. Abnormal behavior is viewed as being symptomatic of an underlying cause. The behavior is important only in that it reflects the underlying cause.

E. Treatment approach - The underlying cause must be modified in order for the symptomatic behavior to be eliminated. THE CONCERN IS NOT TO MODIFY THE BEHAVIOR BUT TO CURE THE UNDERLYING CAUSE.

(1) It would not be a "complete" cure to merely eliminate the behavior without changing the underlying cause.

(2) Symptom substitution should occur if the abnormal behavior is eliminated without changing the underlying cause. Example--child is punished for talking abnormally. This eliminates the behavior but does not change the cause. Later the child begins breaking windows and generally being aggressive to other residents.

(3) Important point - symptom substitution has very seldom been reported. The more frequent result has been that after an abnormal behavior is eliminated other positive behavior changes occur.

F. General Criticisms

(1) Traditional Medical Model approaches usually have several serious deficiencies: (1) The results of treatment approaches based on the Medical Model have not been positive. Often NO TREATMENT control groups have shown equal improvement. (2) The treatment procedures are in general expensive and very time consuming. (3) Training programs take a long time and also can usually only be utilized effectively with a small population.

BEHAVIOR MODIFICATION MODEL

I. Behavior Modification is not based on theory or opinion - the principles of behavior and specific techniques which will be presented during the workshop are based on empirical data.

II. Viewpoint concerning Abnormal Behavior

A. Abnormal behavior can usually be defined in terms of: (1) physical description of the behavior (2) where and when the behavior occurs (3) the frequency with which the behavior occurs. The important point is that the descriptions are based on observable behaviors, not internal mental events. This empirical approach results in (1) clear and precise descriptions of behavior (2) fewer communication problems (3) increased efficiency with respect to treatment methods.

B. Ultimately the definition of abnormal behavior rests with society: the definition of what constitutes an abnormal behavior is relative to -

III. Causes of Abnormal Behavior

A. Causes are usually found in the environment, not within the the person.

B. There are at least two possible ways in which the environment can effectively alter behavior.

(1) Environmental stimuli which precede the behavior -

Stimulus ⟶ Response

Example - Food in the mouth produces salivation; blows to the kneww cause the leg to kick.

(2) Environmental consequences which follow the behavior.

Response ⟶ Consequence

Example - Smiling at a child after he has behaved appropriately; the paycheck at the end of the week.

(3) Example of tantrum behavior - You walk into a classroom in a day-training center. You observe a child lying on the floor screaming, pounding his fists

into the floor. If you were asked to "find out why" he was having the tantrum you might ask the staff members about what happened prior to the tantrum episode. "Did someone hit him?" "Did he fail at a task?" "Was he asked to do something that he didn't want to?" These questions all have in common the assumption that the tantrum was probably elicited or evoked by the immediately preceding conditions.

An alternative approach would be to question the staff concerning what they do during and after the tantrum behavior. What actions follow, rather than precede, the tantrum behavior? What are the consequences of exhibiting tantrum behavior? Do the staff or children pay attention to the tantrum behavior?

Most of the applied research has proven that the consequences of tantrum behavior are most important in explaining the cause. The only way to permanently eliminate tantrum behavior is to permanently eliminate its rewarding or reinforcing consequences.

It is sometimes possible to decrease tantrum behavior by changing the preceding stimulus conditions. Example--Jimmy frequently has a tantrum if he is asked to share his toys.

(Stimulus)		(Response)
Asked to share	⟶	Jimmy has tantrum

If we don't ask him to share he won't have a tantrum. Most people would agree that this is not an appropriate treatment method--yet it is often utilized. More importantly, it doesn't help the child--he doesn't learn to share and he will still have a tantrum if he is asked to share his toys.

Lets analyze the tantrum behavior from a consequence point of view

(Stimulus)		(response)	(consequence)
Asked to share	⟶	tantrum	Jimmy doesn't have to share and receives attention by staff.

Treatment procedure - Continue to ask Jimmy to share his toys but when he exhibits tantrum behavior--make sure that (1) he must share (2) he does not receive attention because of the tantrum behavior. There is a tremendous amount of data to show that he will stop having tantrums. This procedure eliminates the tantrum behavior and helps the child.

C. The experimental and applied research has consistently shown that the consequences of a response are extremely important. The basic conclusion of this evidence is that people often learn to behave abnormally because of the consequences of the abnormal behavior.

D. Abnormal behavior does have a cause but it is not to be found within the person.

E. While an individual's behavioral history may be an important variable, current environmental conditions are probably more important.

F. Treating the "cause" vs. treating the "behavior". A behavior modification approach is quite often criticized as not being concerned with the causes of behavior problems. This is not true. A behavioral treatment program is always concerned with the causes of abnormal behavior - but the analysis is directed toward environmental rather than mental causes. We seek to permanently eliminate problem behaviors by permanently altering the environmental conditions which shape and maintain them.

GENERAL RULES FOR DATA COLLECTION

1. BE OBJECTIVE

When you record data try to be as objective as possible. Do not be influenced by your previous experience with the child, record only what you see at that time.

BE CONSISTENT IN YOUR INSTRUCTIONS

Always provide the same instruction for a particular behavior. For example, if you want the child to follow the sign for "come", always use that sign.

2. RECORD ONLY WHAT YOU SEE

After an instruction is presented and the latency has elapsed, record the plus, zero or hash mark depending on whether or not the child performed the task. Do not record behavior on the basis of previous experience with the child, but rather record whether or not he followed your instructions according to the given definitions during that unit of observation time.

If you are not sure whether or not the child actually engaged in a behavior, even if you are reasonably sure that he did, record that space with a hash mark.

3. ALWAYS GIVE THE CHILD TIME TO DO WHAT HE IS ASKED

Always provide a standard length of time for the child to attempt the required task before you record the information. This lapse of time between the presentation of the instruction and the response of the children is called the latency of the response. You should decide what length of time would be reasonable, that is, that would allow the child adequate time to perform the task before you help him complete it. For example, if you instruct the child to put on his coat to go out-of-doors, give him a reasonable length of time to do it--like three minutes, record whether or not he put on his coat, and then help him if necessary.

It is often very difficult to stand by and watch when you want to assist the child and the other workers. Yet unless the child is given enough time to follow directions we won't know whether or not the child is in fact able to help himself.

4. RECORD BEHAVIOR PROMPTLY

Record each child's behavior as it occurs. It is very easy to forget exactly who did what when you are busy with several children at one time. For example, the observer-recorder in the bathroom should record whether or not a given child uses the toilet according to the definition, and then whether or not he follows the direction to wash and dry his hands.

BEHAVIOR MEASUREMENT

DEFINING BEHAVIOR

I. Why define behavior?

II. Problems in defining behavior.

RECORDING BEHAVIOR

I. Why record behavior?

II. Types of recording devices.

III. Observer error.

TYPES OF BEHAVIORAL MEASURES

I. Frequency of response.

A. Frequency as a measure.
B. Measuring frequency of response.

II. Duration of Response

A. When is duration used as a measure?
B. How to measure duration.
C. Frequency and duration combined.

III. Percentage as a derivative of frequency or duration.

A. Frequency and percentage.
B. Duration and percentage.
C. Uses of percentage.

DATA COLLECTION SHEETS

I. Simple frequency sheet

A. When to use the simple frequency sheet.
B. How to use the sheet.

II. Fixed Behavior data sheet

A. When to use the fixed behavior sheet.
B. How to use the sheet.

III. Time Sample data sheet

A. When to use the time sample sheet.
B. How to use the intermittent observation sheet.
C. Record the data.

CATEGORIES OF BEHAVIOR

- I. Fixed Behaviors
    - A. Fixed behaviors as absolute numbers of occurrences
    - B. Fixed behaviors as desirable behaviors
    - C. Measuring fixed behaviors
        - 1. Data sheet
        - 2. Information provided by the data sheet
        - 3. Analyzing and graphing fixed behaviors
- II. Variable Behaviors
    - A. Variable behaviors as random behaviors
    - B. Categories of variable behaviors
    - C. Measuring variable behaviors
        - 1. Continuous observation
            - a. Data sheet
            - b. Analysis
            - c. Portrayal
        - 2. Time sample method
            - a. Data sheet
            - b. Analysis
            - c. Portrayal

DATA PORTRAYAL

- I. Simple frequency graph
- II. Cumulative frequency graph

DEFINING BEHAVIOR

I. Why define behavior?

A. A formal definition of a response is the first and most critical step towards a consistent behavioral treatment plan.

1. If a treatment plan is to be successful, it must be followed in the same way by all persons involved.

2. It provides an objective, rather than a subjective means of behavioral evaluation.

B. A formal definition specifies precisely the behavior that is to be measured.

1. It provides a concise statement of a behavioral event.

2. It decreases the probability of error in recording.

II. Problems in defining behavior.

A. Precise specification of behavior is the most difficult assignment in a behavior treatment plan.

1. The definition must be specific enough that it excludes as many subjective judgments as possible that the observer must make about a behavioral event.

2. The definition should be specific enough to allow replication. This means that any trained observer should be able to look at a behavioral event and know whether or not the response that occurred was the response that is defined.

B. Once a behavior is defined by an observer, it is necessary to arrive at inter-observer agreement. This is the second most difficult aspect of a behavior treatment program.

1. The behavior that one observer defines as a problem might not seem to be a problem to another observer.

2. It is difficult to arrive at a behavioral definition that all observers will agree upon. Yet, in order to achieve consistently reliable results, all observers must be in agreement as to what they are measuring.

3. A formal definition of a response need not be more than a few words if all observer-recorders are able to demonstrate that they are in agreement as to what

they are recording. However, adequate definition, require elaborate and very precise definitions.

RECORDING BEHAVIOR

I. Why record behavior?

A. Precise records of specific behaviors eliminate personal and historical bias. It is human to be influenced by daily and historical biases. These biases are precisely the variables that we seek to eliminate by precisely defining and consistently recording behavior.

B. Recording is more dependable than simply trying to remember what may or may not have happened. Recording takes the guess work out of long-term programs designed to change behavior.

C. Accurate recording is the basis of consistent behavioral treatment. If a behavioral treatment prescription is to be implemented and maintained, it is critical that all persons involved with a program follow the same procedure. A treatment procedure that is not consistently and accurately followed will fail.

D. Recording allows the treatment procedure to be accurately assessed as to its therapeutic value. Records not only provide an objective means of evaluating the success or failure of a treatment plan in effecting behavioral change, but also provide guidelines for either replicating successes or not duplicating failures.

II. Types of recording devices - human and/or mechanical?

A. Humans as recorders.

1. Humans as behavioral recorders have several positive aspects: They are typically accessible, are easy to move from place to place, usually not susceptible to electro-mechanical failure, and, when equipped with a paper, pencil and a definition of a behavior, usually try their best to record the behavior that is defined.

2. Humans as behavioral recorders have several negative aspects: Although a behavior may be carefully specified, the data show that humans are quite unreliable when called upon to systematically observe and record the occurrence of a behavioral event, they are highly susceptible to the "observer bias" syndrome, characterized by haphazard recording techniques, and last, seem to lose papers, pencils and data sheets at very inopportune times.

B. Mechanical recording devices - There are a variety of mechanical devices available to the behavioral observer. Those most frequently used in behavior modification are listed with some of their assets. Note that each requires a human to develop its full potential.

1. Stopwatches may be used to time -

   a. The duration of a response: how long each response lasts.

   b. Training session length.

   c. These are available in any sporting goods store.

2. Golf Counters may be used to record the frequency of a response. (That is, the absolute number of responses emitted by the child.) They are available in any sporting goods store and attach to the wrist with a strap.

3. Hand Counters may be used to record the frequency of a response. These are hand-held counters, and are available at any sporting goods store.

4. Parking Meter Timers may be used in a variety of ways since it times up to one-hour, may be set for any interval between, and also buzzes when the time has expired.

   a. As a signal that an interval of time is up.

   b. As a signal for a child that he is to receive a reinforcer.

   c. As a session timer.

   d. These are available at any sporting goods store.

5. Tape Recorders are valuable for recording language acquisition training sessions.

C. Observer Error: Observer error is defined as when an observer records data that are inaccurate - the data do not reliably measure the defined response.

1. Observer error may occur when a behavior is not clearly defined, when an observer is too casual about his understanding of a definition, or when the observer does not understand the recording procedure.

2. Have all recording materials on hand at the beginning of a session. If the materials are not available, it is better to not run a session rather than chance errors in the data due to inconsistent recording methods.

3 Use mechanical counters and timers wherever and whenever possible.

D. Inter-observer reliability as method to control observer error and achieve consistency.

1. Inter-observer reliability is assessed when two or more observers observe the same defined response at the same time (but independently of each other) and then compare their results. Preferably, the extra observer-recorders will not have had contact with the behavior prior to recording, but they will have training with respect to definitions and recording procedures.

2. Each observer is equipped with data sheets, mechanical equipment and behavioral definition. They are then instructed to measure the behavior that is defined for a period of time. Their results are then compared.

3. Each observer totals the frequency or duration of the response as he recorded them. The results are then computed and expressed as percentage of inter-observer agreement.

4. The higher the percentage of inter-observer agreement the better.

    a. This means that the response being recorded is well-enough defined that people can agree in their observations.

    b. It also means that over a period of time the data are likely to represent a reliable portrayal of behavior change.

5. Reliability checks should be made at least once every third or fourth session: frequent checks allow potential errors to be corrected before they appear.

CATEGORIES OF BEHAVIOR

There are two main categories of behaviors - fixed behaviors and variable behaviors.

I. Fixed behaviors: Fixed behaviors are behaviors which occur only at fixed times throughout the day.

A. There is absolute number of times that the behavior can occur during the day.

For example:

1. Meals are usually eaten only three times a day.
2. A bed is usually made only once in the morning.
3. A child can undress for bed only once in the evening.

B. Fixed behaviors are generally desirable behaviors and should be treated as behaviors that should be maintained or increased in frequency. For example:

1. A child usually brushes his teeth after breakfast, but may not brush his teeth at the other times that the behavior could occur.
2. Toothbrushing after breakfast is a response that should be maintained.
3. The frequency of occurrence of toothbrushing at other appropriate times would be increased.

C. Measuring Fixed Behaviors

1. Fixed behaviors may be grouped together on one data sheet with one section allotted for each time that the behavior may occur. See example:

OBSERVER NAME ______ DATE ______	Went to toilet upon arrival without assistance	Lined up for lunch	Brushed teeth after lunch without help	Lined up to go out-of-doors	Came for medication when called	Lined up for bus	TOTAL +	TOTAL 0	TOTAL /
Mary	+	+	+	+	+	+	6	0	0
Joe	0	+	+	0	0	0	2	4	0
Cassandra	0	0	0	0	0	0	0	6	0
Flavia	+	0	0	+	0	+	3	3	0
Tom	0	+	0	+	0	+	3	3	0
Eric	/	+	0	audio report /	+	+	3	1	2
TOTAL +	2	4	2	3	2	4			
TOTAL 0	3	2	4	2	4	2			
TOTAL /	1	0	0	1	0	0			

Performed Task = +

Did not perform task = 0

No access to task = /

2. Data recorded on this type of sheet provides two kinds of information.

   a. Totaling each set of marks--+, 0, and / from top to bottom shows how many children are performing each task. This information, when recorded for a period of time, defines the areas that require change, and may suggest the behaviors that should be worked with first. For example, from the above sheet we can see that only two children toilet themselves, only two brush their teeth and only two came for medication that day. In an analysis over a period of time we might select toileting upon arrival and without assistance as a terminal fixed behavior for all of the children.

   b. Totaling each set of marks across provides individual information about who is engaging in what behavior. Over a period of time this total defines individuals that require behavior change, and suggest the individuals who require attention first.

      For example, from this sheet we can see that Mary engaged in all of the fixed behaviors, that Cassandra engaged in none and that Tom engaged in three. If, over a period of days, these data were to remain stable, then we would probably select Cassandra to work with initially.

D. Analyzing and Graphing Fixed Behaviors: Note - both analysis and portrayal are fully discussed in a later section.

1. Fixed behaviors are usually expressed as a percent--the number of times that a response occured, divided by the total number of times that it could have occurred, times 100.

   a. Formula:

$$\frac{\text{Number of responses that occurred}}{\text{Total number of responses that could have occurred}} \text{ x100=}$$

      Percent of behaviors engaged in.

   b. Example: The child is sent to the bathroom four times a day everyday., On a given day, he goes to the bathroom by himself two times. His responses are recorded, and calculated as follows:

$$\frac{(\#\text{ that occurred})}{(\text{total possible})} = \frac{2}{4} = 4\overset{.50}{\overline{)\,2.00}} = .50 \text{ x } 100 = 50\%$$

2. Fixed behaviors may be graphed on a simple frequency graph that represents percent of responses as a function of days, or as an histogram representing the same measures.

II. Variable Behaviors: Variable behaviors are behaviors that may occur at almost anytime during the day or night.

A. There is not an absolute number of times that a response can occur, but rather the response may occur almost anytime throughout the day.

For example:

1. Aggressive behaviors, such as hitting another child may happen at anytime.
2. Quiet play.
3. Stereotyped motor movements.
4. Tantrums

B. Variable behaviors may fall into three categories:

1. Desirable behaviors: Those behaviors that should be maintained or increased.
2. Neutral behaviors: Behaviors about which nothing will be done.
3. Undesirable behaviors: Those behaviors that should be eliminated or decreased in frequency.

C. Measuring Variable Behaviors:

1. Usually only one variable behavior appears on a data sheet.
2. The specific type of sheet that is used depends upon the behavior that is being measured--but it must include all of the variables that are being measured. There are two general ways to measure variable behaviors- Continuous observation or time sample.

a. Continuous observation method: If you have a limited amount of time and are able to observe the child or children all of that time, then you can simply count the number of responses that occurred during that time interval for each child or children.

1. For example: You have one hour each day to observe children on the playground. You select three children who seem to have a high frequency of hitting other children. The data sheet you might use to record hitting behavior for these three children would look like the following example.

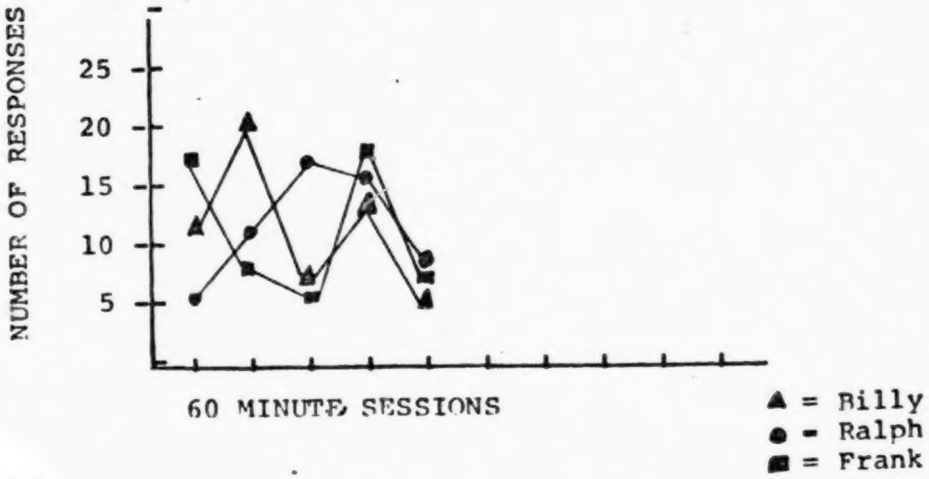
OBSERVER TW DAY 4-21-70	TIME STARTED 9:00 ENDED 10:00	TIME STARTED 9:00 ENDED 10:00	TIME STARTED 9:00 ENDED 10:00	TIME STARTED 9:00 ENDED 10:00	TIME STARTED 9:00 ENDED 10:00
Billy	卌 | 卌	卌 卌 卌 卌	卌 |||	卌 ||| 卌	卌 |
Ralph	卌 |	卌 | 卌	卌 卌 卌 ||	卌 卌 卌	卌 |||
Frank	卌 卌 卌 ||	卌 |||	卌 ||	卌 卌 卌 ||	卌 ||

2. This data would be analyzed as simple frequency of response:

Billy - 11, 20, 8, 13, 6
Ralph - 6, 11, 17, 15, 8
Frank - 17, 8, 7, 17, 7

[Numbers indicate frequency of hits per day]

3. The data would be portrayed on a simple frequency graph:



b. Time sample method - This method is used to record the frequency of occurrence of a behavior during specified intervals. (The time interval is determined by the behavioral definition.)

   1. For example: You might want to measure the frequency of stereotyped motor movements in an individual child, but it is impossible to observe him continuously. Therefore, you decide to use the following type of sheet.

SECONDS

LARRY: Stereotyped motor Movements

	10	20	30	40	50	60
50	+	+	+	O	+	+
20	O	O	+	+	O	O
50	O	+	+	+	+	+
40	O	+	O	+	+	+
40	+	O	+	+	+	O

200

      a. Data are recorded for five minutes during a 30-minute period.

      b. There are five one-minute observation periods divided into 10-second blocks.

      c. During each ten-second interval, the response is recorded if it occurs at anytime during the interval. If the response does not occur record a zero so that you do not lose track of the intervals in which you are recording.

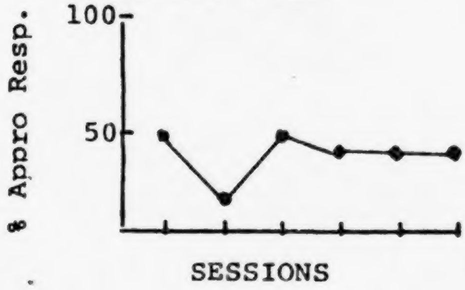
      d. Recording for five minutes each 30 minutes provides 50 minutes of observation during a 5 hour day.

2. To analyze this data we would add the total number of intervals in which a response occurred and divide by the total number of intervals observed-e.g.

$$\frac{\text{20 intervals in which responses occurred}}{\text{60 possible intervals}} = 100$$

and is expressed as a percentage $\frac{20}{60} = .33\ 1/3$ x 100 = 33 1/3 or 33%. This means that out of sixty possible opportunities to engage in the response, that 33% of that time he was engaging in the response.

3. This data would be portrayed on a simple frequency graph:



TYPES OF BEHAVIORAL MEASURES

There are two basic measurement categories: Frequency and duration.

I. Frequency of response: As the basic behavior measure, frequency may be defined as the number of times a response occurs.

  A. When is frequency used as a measure?

    1. Frequency of response is selected as a measure when we want to know how many times a response occurs.

    2. Frequency of response is usually measured in conjunction with a time interval.

      a. The time interval may be almost any unit: seconds, minutes, hours, or days.

      b. The unit of time is usually arbitrary.

        1. It depends on what type of behavior you are measuring--fixed or variable.

        2. It depends on how often you or an observer can make observations.

    3. Frequency may be used to record both behavioral deficits and excesses.

      a. Deficits

      b. Excesses

  B. How to measure frequency of response.

    1. Frequency is measured by simply recording each occurrence of a defined response during the interval of time that you selected.

    2. Steps in recording the frequency of a response:

      a. Define the response that you wish to measure.

      b. Determine how often you will be able to observe and record.

        1. The time interval is often dictated by the definition of the response, e.g. If you are recording a fixed behavior, the intervals might be 4 hours or 24 hours apart, whereas if you are recording a variable behavior the intervals might be only a few seconds apart.

2. Be sure to record often enough to get an accurate measure of the behavior.

C. Devise a data sheet appropriate to your measure as described in DATA COLLECTION

D. Record the behavior consistently according to your definition and procedure.

II. DURATION OF RESPONSE

Duration of a response is the amount of time that a response occurs.

A. When is duration used as a measure?

1. Duration is selected when we want to know how long a response occurs--the time that an individual spends engaging in a specific response.

2. Duration, like frequency, is usually measured in conjunction with a time interval--seconds, minutes or hours.

3. Duration may be used to record deficit and excess behaviors when you want to increase or decrease the amount of time a response is engaged in.

a. Deficits: A child eats his lunch very, very slowly. You decide to determine just how slowly he actually eats and to then speed him up. You therefore determine a reasonable length of time for a meal to be consumed--perhaps by observing both slow eaters and fast eaters for a few days and determining an average "eat time", you decide that 25 minutes is a very reasonable length of time and begin to observe and record baseline data by starting a stop-watch when the child's plate is placed in front of him and stopping it when the child's plate is removed at his completion. This is a measure of the base rate duration of the child's meal eating behavior.

You define the behavior to be recorded as: The time the child takes to finish his meal.

You would then perform manipulations designed to decrease the length of time required by the child to eat. Each session would be recorded as a duration measure.

b. Excesses: One of the children always seems to be out of his seat at the work table. You decide to find out how much time he actually spends in his chair and then attempt to increase that length of time, thus decreasing the amount of time that he is out of the chair. (At this point you are not concerned with his work behavior.)

You carefully define the terminal response that you want as: The child's buttocks will be in contact with the seat of the chair and the child will be facing the work table with no more than 12 inches between the edge of the table and his body.

You record baseline data on the child's in-seat behavior--during each 20 minute work period during the day: Each time that the child initiates an in-seat response according to the definition, you click on the stopwatch. When the child terminates the response you click the watch off.

After seven base rate 20-minute observation periods you find that the child has spent 7, 12, 6, 8, 4, 13 and 5 minutes in his seat out of each 20 minutes. Each of those is the per session Duration of In-Seat Behavior.

B. How to Measure Duration of a Response

1. The most effective and precise way to measure duration is with a stopwatch, although a clock or wristwatch with a sweep-second hand may be used.

2. Individual response duration may be measured by clicking the watch on at the initiation of the response, and clicking it off at the termination of the response--recording the seconds, etc., immediately--and re-setting the watch in preparation for the next response. This method might be desirable if you wished to record, for example, the amount of time a child required to put on each article of clothing while dressing himself.

3. Total duration of responses is measured in the same way, but without re-setting the watch after each response.

   This method could be used if you wanted to measure, for example, the total amount of time that a child engaged in autistic-type behavior.

C. Frequency and Duration: Combined sometimes a more precise analysis of behavior may be obtained by recording both the frequency and the duration of a response.

   1. This combination is used when we want to know now only how many times a response occurs, but also how long each response lasts.

   2. A hand counter and stopwatch would both be used.

III. PERCENTAGE AS A DERIVATIVE OF FREQUENCY OR DURATION: Often there are problems associated with consistent data recording--a child may be absent from the Center, the child may not be available for a session or you may run out of reinforcers or for some other reason be unable to complete a session to its predetermined length. For the preceding reasons it is a good idea to express as many behavioral measures as possible and convenient as a percentage.

A percentage shows simply out of a total possible amount of time, or a total period of time or of a total possible number of responses, what portion of the possible figure was spent engaged (or not engaged) in a defined response.

$$\frac{\text{Total outcomes}}{\text{Total possible outcomes}} \times 100 = \%.$$

A. Frequency and Percentage

   1. It is sometimes convenient to express frequency of response as a percentage.

   2. Example--if a child engages in a response, interrupting a speaker, with seeming frequency, you may want to determine exactly how often that behavior occurs.

      You would therefore select an interval of time--perhaps 30 minutes and count the number of times that the child interrupts while a speaker is talking--and also the total number of times that the speaker talked for five or more seconds during that 30 minute interval.

      a. There are now two pieces of "raw" data: The child's number of interruptions and the total number of times that the child could have interrupted: 7 interruptions, 12 possible times he could have interrupted.

         Using the formula $\frac{\text{total outcomes}}{\text{total possible outcomes}} \times 100$, we find

         that $\frac{7}{12} = .583 \times 100 = 58.3\%$

This means that out of 12 possible times that the child could have engaged in the response, he engaged in the response 58.3% of the time.

b. This is especially convenient in analyzing this type of response in which both the total outcomes and possible outcomes vary from session to session.

B. Duration and Percentage

1. It is convenient to express duration of response as a percentage.

2. In this case, as in frequency, both the measured variables may differ from session to session or, as in the example below, the total number of minutes may remain constant.

3. Example: You measure the total duration of a child's actually working at putting a puzzle together out of an allotted number of minutes for completing the task. If you use the formula - $\frac{\text{total time spent working}}{\text{total time possible}}$ x 100 = % time spent working.

   a. Analyze the raw data with the formula:

$$\frac{\text{(total duration)} \quad 3 \text{ minutes}}{\text{(total possible minutes)} \quad 12 \text{ minutes}}$$

$$\frac{3 \text{ minutes}}{12 \text{ minutes}} = .25 \times 100 = 25\%$$

C. Uses of Percentage:

1. $\frac{\text{number of responses}}{\text{total number responses possible}} \times 100 = \%$ percent of total possible responses

2. $\frac{\text{duration of response}}{\text{total amount of time}} \times 100 = \%$ percent of total possible time

I. SIMPLE FREQUENCY DATA SHEET (See Figure 1)

A. This sheet is used to measure response rate (frequency of response).

B. How to use the sheet.

1. The response to be measured is defined.

2. The data sheet is constructed.

    a. It is convenient to put as many sessions on one sheet as possible to avoid loss of data and to decrease the number of sheets required. This, however, is determined by the number of responses that you are measuring.

    b. Keep the data sheet as neat as possible to avoid possible confusion of numbers or marks.

3. During recording sessions, each occurrence of the response for each child is recorded with a hash mark. It is convenient to arrange the marks in sets of five.

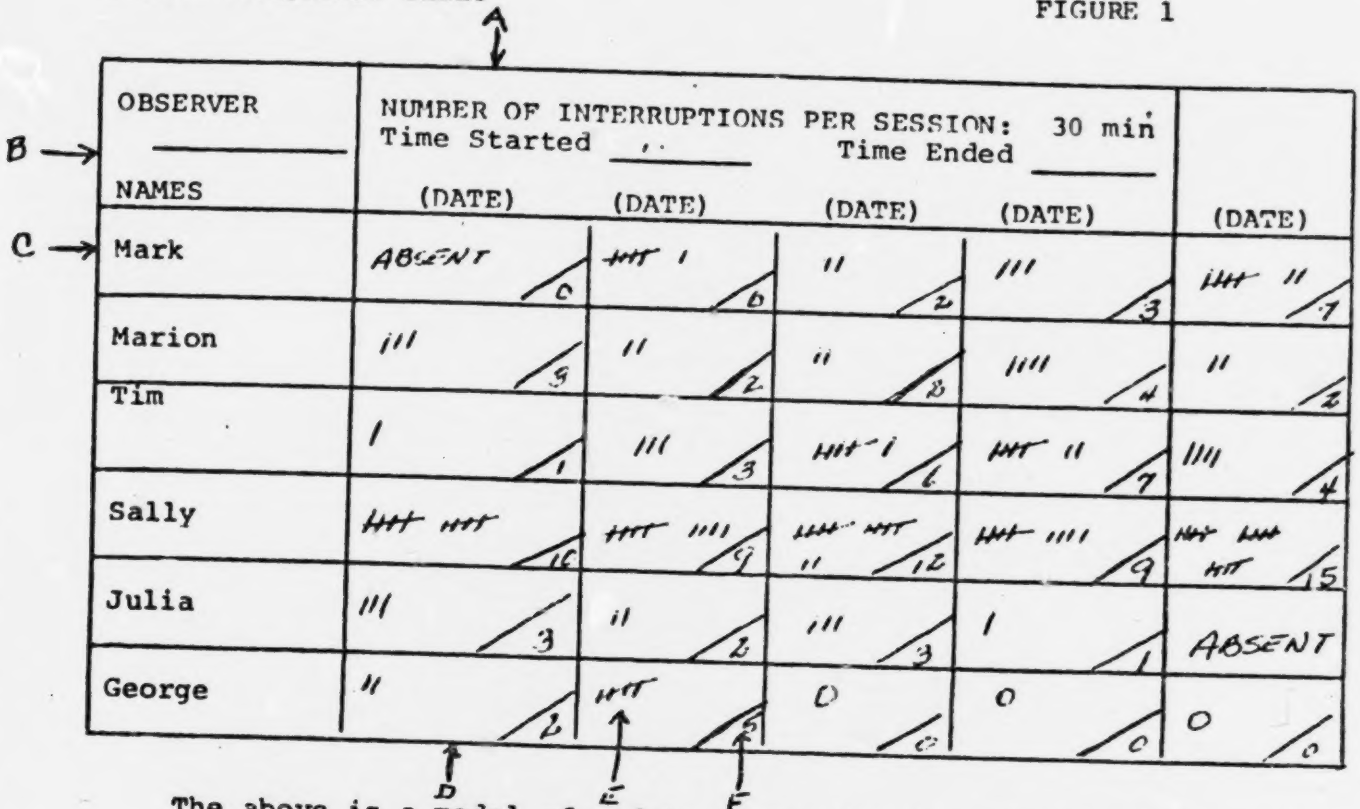
    a. The total number of responses for each child is recorded in the lower right-hand corner of each child's block each day.

    b. Actual session length is recorded.

DATA COLLECTION SHEETS

SIMPLE FREQUENCY SHEET

FIGURE 1



OBSERVER ________

NUMBER OF INTERRUPTIONS PER SESSION: 30 min
Time Started ________ Time Ended ________

NAMES	(DATE)	(DATE)	(DATE)	(DATE)	(DATE)
Mark	ABSENT 0	卌 / 6	// 2	/// 3	卌 // 7
Marion	/// 3	// 2	// 2	//// 4	// 2
Tim	/ 1	/// 3	卌 / 6	卌 // 7	//// 4
Sally	卌 卌 10	卌 //// 9	卌 卌 // 12	卌 //// 9	卌 卌 卌 15
Julia	/// 3	// 2	/// 3	/ 1	ABSENT
George	// 2	卌 5	0 0	0 0	0 0

The above is a model of a data sheet that is used to record the number of times that six children interrupted a speaker (the teacher and/or the other children) during five, 30-minute sessions.

Each arrow indicates a point that is recorded on the sheet, and each is described below.

ARROW	DESCRIPTION
A	A description of the behavior being measured.
B	Space for observer name.
C	Blocks for as many children as are being measured.
D	Block in which to record frequency of response for each child.
E	Hash marks - each one represents one response.
F	Total number of hash marks per child per session.

FIXED BEHAVIOR DATA SHEET A ↓ FIGURE 2

E ↓

		Enters bathroom upon arrival & uses it without assistance	Washes hands after toilet	Lines up for meal	Uses bathroom after meal	Lines up to go out-of-doors	Lines up for bus	Washes hands after toilet		TOTAL +	TOTAL 0	TOTAL /	
B →	OBSERVER NAME Linda DATE July 1, 1970												
	Terry	+	+	+	+	0	/	0		4	2	1	
	Herbie	0	0	+	+	+	/	0		3	3	1	
	Tommy	+	+	/	+	+	/	/		4	0	3	
C →	Johnny	+	+	+	+	+	/	+		7	0	0	
	Frank	0	0	0	0	+	~~/~~ 0	0		1	6	0	
	TOTAL +	3	3	3	4	4	0	1					
D →	TOTAL 0	2	2	1	1	1	0	3					
	TOTAL /	0	0	1	0	0	5	1					

+ = Performed Task
F → 0 = Did not perform task
/ = No access to task

The above is a model of a data sheet that is used to record fixed behaviors. Please refer below for the description of what each arrow indicates.

ARROW	DESCRIPTION
A.	Spaces for descriptions of the fixed behaviors. Noti that a space is provided for each behavior as the occasion for the response occurs each day. Blanks are left should additional behaviors need to be added.
B.	Block with space for observer name and the date. Note that one sheet is used for each day's recording.
C.	Spaces for the children's name.
D.	Spaces for totals of each mark counting from top to bot
E.	Spaces for totals of each mark for individual children.
F.	Legend which indicates the function of the marks.

III. TIME SAMPLE or INTERMITTENT OBSERVATION DATA SHEETS (See Figures __ and __ .)

A. These sheets are a little more complicated, but are very useful for recording variable or free behaviors.

B. Figure __ and Figure __ are basically the same. Figure __ has spaces added diagonally so that more than one behavior can be recorded at a time. For example, Figure __ might be used to measure the frequency of work behavior during a five minute observation period. Figure __ might be used to record both work behavior of the child during each observation period and the frequency of teacher attention during each of the same observation periods.

C. How to use the intermittent observation method.

1. Define the behavior or behaviors that you wish to measure.

2. Determine the time intervals you want to use.

a. Seconds, minutes, multiples of minutes, half-hours or hours are the most convenient units.

b. The interval may be dictated by the time you can spend observing, but should be determined by when the problem behavior is most likely to occur.

c. Intervals may be recorded as:

1. Random time blocks during a larger interval, such as one or more five-minute observation periods (constant) during each hour or specified hours during the day. For example, you might decide to make three, five minute observations during each of the hours of 8-9, 9-10, and 10-11.

Or you might observe and record for a five-minute period at random during each one-half hour interval of a given hour or hours.

2. Observations made at specified intervals during the day, such as every 30 minutes.

3. Specified blocks of time, such as the 10-second intervals in Figures 3 and 4 that would be observed either at random or at specified times during a programmed session.

TIME SAMPLE DATA SHEETS

NAME ________________ OBSERVER ________________
SESSION ________________

Time Started ________
Time Ended ________

SECONDS

WORK RESPONSE DURING 10-SECOND INTERVALS
MINUTES

	10	20	30	40	50	60	
1	+	+	+	0	0	0	3
2	0	0	0	0	0	0	0
3	+	0	0	0	0	0	1
4	0	+	+	0	0	0	2
5	0	0	+	+	0	0	2

+ = Response occurred
0 = Response did not occur.

TIME SAMPLE SHEET FOR RECORDING
ONE VARIABLE

FIGURE 3

NAME ____________
SESSION ____________

Time Started ____________
Time Ended ____________

WORK RESPONSE/10-SECOND TEACHER, ATTENTION
10-SECOND

	10	20	30	40	50	60	
1	0/+	0/0	0/0	✓/0	✓/0	✓/0	3/1
2	✓/+	0/+	0/+	0/0	0/0	✓/0	2/3
3	✓/0	✓/+	0/+	0/+	✓/+	✓/+	4/5
4	0/+	0/0	0/0	0/0	0/0	✓/0	1/1
5	✓/+	0/0	0/0	0/0	✓/0	✓/0	3/1

Work: + = Occurred 0 = Did not occur

Attention: / = Occurred
0 = Did not occur

TIME SAMPLE SHEET FOR RECORDING MULTIPLE VARIABLES FIG. 4

3. Record the Data

   a. If you are using blocks of time - as in the figures with 10-second intervals, for each 10-second interval you would observe to see if the defined response occurs.

      1. If the response occurs at any time during the 10-second interval, a mark is recorded indicatin that it occurred.

      2. If the response does not occur, a mark indicating that is recorded so that you do not lose track of the interval you are recording in.

   b. If you are recording during specified intervals, such as every 15 minutes, you would simply record the behavior that the child was engaging in when he was observed.

4. At the end of each day, total and analyze the data according to the method you are using and graph it.

D. 1. A time sample provides only a small unit of actual performance during a day--it is a "sample" of absolute behavior.

2. In most instances, unless you are running a specific project, many short, random observations made throughout the day are a more effective sampling than long, specified observations.

REINFORCEMENT

I. DEFINITION OF A POSITIVE REINFORCER: A reinforcer is a stimulus or event which, when presented contingent on a response, increases the future frequency of that response. (The symbol for positive reinforcement is R+.)

A. A reinforcer should not be characterized as being desirable, good, etc. The single important characteristic is that it increases the future frequency of responses that it follows. Example--If you spank a child each time he hits another child and this results in an increase in his aggressive behavior--spanking is a reinforcer.

II. CHARACTERISTICS OF A REINFORCER:

A. A reinforcer is usually relative to time, place, and person.

(1) An event may serve as a reinforcer at one time, but not at another time. E.G.--most children enjoy candy. Yet a child who has just eaten a large meal is not likely to respond in the same way for candy as he might if he had not just eaten. However, a child who is thirsty just prior to a juice break is likely to respond very well if the presentation of his juice is contingent on his emitting appropriate behavior.

(2) Placing a child in the quiet room contingent on inappropriate behavior usually acts to decrease the frequency of the inappropriate behavior. However, this is only effective if the child is being removed from a situation which provides many positive reinforcers. If you consequate poor work behavior with removal to the quiet room you may in fact reinforce the poor work behavior. The child can escape from the work situation by behaving disruptively.

(3) An event which serves as a reinforcer for one person does not necessarily serve as a reinforcer for another person. Although there are many general events which may serve as reinforcers for many people (like money, attention, etc.) the particular event that increases the probability of a particular response is often an individual event.

III. HOW TO DISCOVER REINFORCERS: The following are some simple steps to follow in discovering potential reinforcers.

A. Observe:

(1) What does the child prefer to do when he has unlimited opportunity to participate in a variety of events?

(2) The events which the child prefers - i.e. those which he chooses to occupy the greatest amount of his time are potentially reinforcing events for that child.

B. Test:

(1) From the events selected as potential reinforcers, select the most frequently preferred event.

a. Manipulate the environment

1. Record some specific aspect of a child's behavior prior to the use of any contingencies (baseline period).

2. Establish a contingency between the behavior (response) and the event selected as a potential reinforcer.

3. Record the child's behavior (responses) during the reinforcement period.

a) If the response rate increases, the event that follows that response may be called a reinforcer.

b) If the response rate does not increase in frequency, the event which follows that response may not be called a reinforcer.

IV. VARIABLES WHICH INFLUENCE REINFORCER EFFECTIVENESS:

A. Immediacy of the presentation of a reinforcer. In order to be maximally effective, the reinforcer must immediately follow the response.

(1) If there is a delay between the occurrence of the response and the delivery of the reinforcer--(1) the response will not be strengthened as much, (2) other possibly inappropriate behavior may be directly reinforced.

B. Frequency of the presentation of a reinforcer.

(1) Initially, the reinforcer should be presented following each occurrence of the response.

(2) Later, the reinforcer may be presented only intermittently, following the response.

C. Consistency of the presentation of a reinforcer.

(1) Reinforce only the defined behavior.

(2) Be sure that undesirable behavior or incompatible behavior is not also reinforced.

(3) If a child does not perform a required task, be sure that he is NOT reinforced for that task.

D. Quality and quantity of a reinforcer

(1) The better the quality and the greater the quantity of a reinforcer, the more effective it will be in effecting behavior.

V. CONTINGENT REINFORCEMENT:

(1) Definition: Contingent reinforcement is a process in which a reinforcing event is programmed to follow a defined response, that is, a defined response is followed closely in time by a reinforcer.

(2) How is a reinforcer made contingent on a response?

a. Determine the reinforcer in accord with the observe and test rule.

b. Arrange the environment according to individual need.

1. Require that a specified response produce

2. Receive a specified reinforcer.

(3) Resident Abuse or Therapy?

a. Giving children reinforcers contingent on their good behavior obviously means that you will limit their access to reinforcers when they are not behaving appropriately. Is this child abuse? The question of abuse should be settled on the basis of empirical results not theory. The results of all of the research show that when reinforcement is given contingent on appropriate performance children behave correctly. When reinforcers are given out just as frequently but without respect to the child's behavior there is a general deterioration in performance. If the purpose of the Center is to effectively and positively change the behavior of the child, then non-contingent or free delivery of reinforcement should be considered child abuse.

b. The treatment programs which you will be involved in are designed so that children are not denied very many reinforcers. Initially the children will be reinforced for making approximations to the desired behavior. Later they will only have to respond more appropriately to be reinforced. If the program sequencing is carried out effectively most of the children will be reinforced most of the time.

VI. TYPES OF REINFORCERS: Reinforcing events are relative to time, place and person. There are many events which serve as reinforcers. If shaping a behavior is the goal, it is best to select a highly preferred, available reinforcer. If maintaining a behavior is the goal, then the choice might be a less frequent, but possibly more desirable event.

There are several categories of potentially reinforcing events to consider.

A. Consumable Reinforcers

(1) These are edibles, such as candies, a spoon of applesauce, marshmallows or cereal. This group includes anything that the child can eat.

(2) The delivery of this type of reinforcer usually depends upon the presence of another person who acts as a reinforcing agent.

B. Social Reinforcers

(1) These are reinforcers such as verbal or physical attention, pats on the back, affection, smiles or eye contact.

(2) This group of reinforcers is very effective in shaping new behavior and in maintaining behavior over a long period of time.

(3) The delivery of this type of reinforcer usually depends upon another person who acts as a reinforcing agent.

C. Responses which produce their own reinforcement

(1) There are a few events that have no observable consequences, such as playing, some sexual behaviors, watching TV and splashing water.

(2) These events usually have no observable consequences, and usually do not require the presence of another person.

VII. ACCIDENTAL REINFORCEMENT

A. Definition: Reinforcement which by chance occurs following a response. If you pay attention to a child during or after instances of bizarre behavior, the behavior will increase in frequency (reinforcement) independently of whether you really meant to reinforce the child.

B. Other Typical examples of accidental reinforcement are:

(1) Taking a child out to play during or immediately after he has been engaging in some type of inappropriate behavior.

(2) You suddenly decide that all the children really need is love and affection. As you walk through the ward you hug and talk to each child. Given that many of the children were responding inappropriately (i.e. twirling, rocking, sitting in the corner) you have just reinforced their abnormal behavior. You only meant to love the children but in fact you have done them a great harm loving children only when they are behaving appropriately may not make you feel better but the children will benefit greatly.

EXTINCTION

I. DEFINITION OF EXTINCTION: Extinction is the process of withholding reinforcement for a response that was previously reinforced which results in a decrease in the frequency of that response.

The symbol for the extinction process is EXT.

II. NECESSARY STEPS IN THE EXTINCTION PROCEDURE: Unless you can accomplish the following steps, a simple extinction procedure will not be effective.

A. Identify the reinforcers that are maintaining the behavior.

B. Control those reinforcers: be sure that they never follow the behavior.

III. CHARACTERISTICS OF THE EXTINCTION PROCEDURE

A. Extinction is a gradual process.

(1) A behavior that was previously reinforced, and is then treated with an extinction procedure will gradually decrease.

(2) The amount of time required to extinguish a behavior depends on several variables, but in general the process is gradual.

B. An extinction procedure will frequently result in an increase, and later a decrease, in behavior.

(1) A behavior that was previously reinforced, and then is no longer reinforced will initially increase in both frequency and intensity.

(2) The behavior will then begin to decrease in frequency.

(3) If the behavior is never reinforced, after the initiation of the Ext procedure, it will ultimately be completely eliminated.

C. Extinction is a permanent process.

(1) A behavior that is no longer reinforced will not be maintained.

IV. VARIABLES WHICH AFFECT THE EXT PROCESS

A. Consistency of treatment: It is critical that all persons who might have contact with the child should be aware of the exact behaviors that should never be reinforced, and also of the exact procedure to be used.

B. Prepare for a procedure of long duration:

(1) If a behavior is intermittently reinforced it will take longer to decrease in frequency, e.g. little old ladies who incessantly play one-armed bandits in Las Vegas.

(2) Since most inappropriate behaviors have been reinforced intermittently you must be prepared to continue the procedure even if at first it does not "seem" to be successful. You must remember this or your behavior will extinguish and the procedures will be followed inconsistently.

(3) Remember the above or YOUR BEHAVIOR WILL EXTINGUISH and the procedures will be followed inconsistently.

V. REINFORCEMENT AND EXTINCTION PROCEDURES COMBINED

A. Combining Reinforcement and Extinction

(1) If a unit of behavior is systematically reinforced and a second unit of behavior is systematically treated with an extinction procedure, the reinforced behavior will usually increase in frequency and the second behavior will decrease in frequency.

(2) A combination of systematic reinforcement for appropriate behaviors and a systematic extinction procedure for inappropriate behaviors is likely to cause the most immediate change in behavior patterns.

PRIOR TO ANY DISCUSSION OF PUNISHMENT, IT IS IMPORTANT TO REMEMBER THAT APPROPRIATE BEHAVIORS INCOMPATIBLE WITH A PUNISHABLE BEHAVIOR MUST BE POSITIVELY REINFORCED

PUNISHMENT

I. DEFINITION OF PUNISHMENT: Punishment is the process of presenting a stimulus or event, contingent upon a response, which results in a decrease in the future frequency.

II. WHAT IS A PUNISHING EVENT? As is discussed in the earlier section which describes observing and testing reinforcing events before they may be called reinforcers, a particular event may not be called a punisher unless it decreases the future frequency of the response that it follows. There are similar procedures to determine what functions as a punishing event.

III. WHEN DO YOU USE PUNISHMENT PROCEDURES?

When you cannot extinguish the behavior because you cannot control the reinforcers that are maintaining the behavior. Example, (1) it is easy for you to not attend to inappropriate behavior but it is usually difficult to ensure that other people such as residents do not reinforce the behavior. (2) Some responses produce their own reinforcement. Examples--splashing water, breaking things, playing, etc.

IV. GENERAL CHARACTERISTICS OF PUNISHMENT

A. A punisher is relative to time, place and person.

(1) An event may serve as a punisher at one point in time, but not at another. E.g. If a child throws food and is punished by removing his food from the lunch table after the meal is almost over, it is unlikely that the punishment would be as effective as earlier in the meal.

(2) An event may serve as a punisher in one place, but not another. E.g. Punishing a child by sending him to his room can serve as a reinforcer for that child if the room has all of the child's toys and other personal possessions in it. A sterile environment such as a quiet room, however, is likely to function as a mild punishing event.

(3) An event may serve as a punisher for one person, but not another. A loud shout may serve as a punisher for some children. However, usually negative verbal attention from an adult serves as a reinforcer to most children, especially if the child seldom receives any positive attention.

(4) If an event is to serve as a punisher, it must decrease the future probability of the response it follows.

(5) If an event does not decrease a behavior or does not cause a change in the behavior that it follows, it is not a punisher.

(6) IF A BEHAVIOR DECREASES WITH THE USE OF PUNISHMENT, BUT THEN AGAIN INCREASES - EITHER (1) THE EVENT DEFINED AS A PUNISHER IS NOT IN FACT A PUNISHER FOR THAT BEHAVIOR OR (2) A REINFORCER THAT IS MORE POWERFUL THAN THE PUNISHER IS MAINTAINING THE BEHAVIOR.

B. Three major factors which influence the effectiveness of the punishment procedure.

(1) It must be IMMEDIATE: An occurrence at a defined behavior must be punished immediately before any other behaviors can occur.

(2) It must be SEVERE: The punishing event must cause a decrease in behavior. The severity of the punisher depends on the individual child.

(3) You must allow the child an alternative response which can then be reinforced.

V. TYPES OF PUNISHERS: A punisher is relative to time, place and person. If an event is to be called a punisher it must decrease the behavior that it follows. There are several categories of punishers to consider - from mild to severe.

A. Response Cost:

(1) Response cost is the response-contingent removal of a positive reinforcer. This procedure can be very effective in decreasing behavior if a child has a preference for a particular reinforcer.

(2) Response cost procedure requires that a person lose something of value to him, contingent upon his emitting an inappropriate behavior.

(3) The use of a response cost procedure depends on the presence of another person who acts as the punishing agent.

(4) Any reinforcer unique to an individual may be used in a response cost procedure. Included might be portions of a meal, a toy or withdrawal of attention.

B. Time Out

(1) A time out procedure is one in which the child is placed in a condition which will not allow contact with any reinforcers.

(2) In general, a time out procedure requires that the child immediately be placed in an environment (such as the quiet room) where there is little verbal or physical interaction.

(3) A time out procedure requires the presence of another person to place the child in the time out room.

C. Aversive Stimulation

(1) There are several very severe punishers, such as shock, which will often allow immediate control of a behavior.

(2) These types of punishers are used ONLY in extreme cases of behavioral excesses, such as extreme self-abusive behavior. The behavior must be so extreme that the use of another, milder form of punishment would endanger the physical well-being of a child.

(3) The use of this type of punisher requires the permission of a medical doctor, the permission of the director of the institution, and also a qualified person as the punishing agent.

FURTHER PRINCIPLES OF BEHAVIOR

I. CONDITIONED REINFORCEMENT

The first time you give money to a child, he may briefly examine it, ask you what it is for, or simply disregard it. The money initially has little value for the individual. Only after experience with money does it become valuable. The child must be shown that money can be exchanged for objects that he finds reinforcing. More technically, money becomes an effective reinforcer when it allows access to already established reinforcers. Money then, is an example of a learned or conditioned reinforcer. A conditioned reinforcer is an event or object which acquires its reinforcing properties through association with other reinforcers.

Points to Remember:

1. Unless conditioned reinforcers are at least sometimes associated with other "back up" reinforcers they will lose their reinforcing properties.

2. Attention, praise, applause are also conditioned reinforcers. They are known as social reinforcers.

3. A generalized reinforcer is a reinforcer which will allow access to many kinds of different reinforcers. For example, money can be exchanged for food, games, television viewing, candy, toys, etc.

II. INTERMITTENT REINFORCEMENT

In shaping behavior we usually use a schedule of continuous reinforcement. When we wish to maintain an already established behavior, we usually choose a schedule in which a response will produce an occasional or intermittent reinforcement. Intermittent reinforcement schedules are typically used in two ways:

1. A time-based schedule: A given amount of time must elapse before a response will produce reinforcement.

2. A response-based schedule: A given number of responses must be emitted before reinforcement is delivered.

Both types of schedules fall into either one of two classes: fixed or variable. Thus we may have a fixed time (interval) and variable time (interval) schedule and fixed response or variable response schedules. In order to generate large amounts of behavior we can use variable response based schedules; to generate lower rate, but more consistent and stable behavior we may use variable time based schedules.

Points to Remember:

1. Intermittent reinforcement schedules are used to maintain behavior but are not appropriate to establish new behavior.

2. A behavior that is maintained by intermittent reinforcement is much more resistant to extinction than a response which has been continually reinforced.

3. Intermittent schedules also control the pattern of responding. Example--if quizzes are given every week most studying is done the night before and little done in the beginning of the week. This is an example of fixed interval schedule. To generate more consistent day-to-day study we use a variable interval schedule where quizzes are given at random.

III. STIMULUS CONTROL

When a child learns a certain skill in a school setting nothing will guarantee that he will perform the new behavior in his home setting. If the behavior occurs in one situation and not at all or only infrequently in others, stimulus control has been established with respect to these situations. In this case the institutional setting controls or sets the occasion for the occurrence of the newly-learned skill whereas the home setting does not. We produce a discrimination when we reinforce a particular behavior in one setting and not in another. Generalization occurs when we reinforce a behavior in a variety of settings and look for its occurrence in other situations. Whether your procedure should work toward producing discrimination or generalization is always relevant to the specific situation. For example, a child must learn to urinate only in the toilet where it is appropriate (normal) and not in other places in the building (abnormal). Similarly, children must be able to use words effectively, not only in one particular setting but in most all settings.

Points to Remember:

1. When a behavior was taught in one situation and also occurs in situations similar to it, the behavior has generalized to different settings.

2. Discrimination is shown when a behavior is taught in one setting but is not typically shown in other settings.

IV. MOTIVATIONAL VARIABLES

An event can be called a reinforcer if it increases the frequency of the response that it follows. The effectiveness of a reinforcer in many cases is dependent on the person's access to it.

1. Deprivation: Is a procedure in which a specific object or event is withheld so that it may later be used as a reinforcer. (Note: This is different than an extinction procedure.)

2. Satiation: When the person has unlimited access to a reinforcer it tends to decrease in its effectiveness in maintaining behavior.

While motivation is an extremely important concept it is often misused. A child's "lack of motivation" is frequently cited as an explanation for his failure in the treatment program. The course of failure is inferred as being inside the child. This approach results in the following problems: (A) Is not really an explanation at all because it usually involves "circular" reasoning. Example--"Harry doesn't work well at all." "He's not very motivated." "Why doesn't he work well?" "He's not motivated." (B) Places the treatment emphasis on lack of internal motivation rather than on the deficiencies of the treatment program. A child's "lack of motivation" is usually due to inadequate reinforcement.

OBJECTIVES
POPPE PROJECT

The Poppe Project is a film which demonstrates a contrast between an unstructured custodial program and a program which utilizes the principles of positive reinforcement, extinction and punishment in an institutional setting. The following objectives were prepared both to aid in analyzing the film's content and to use in later discussions. Discussion questions for each objective follow below the dotted line for a question.

1. Watch for behaviors similar to those exhibited by children with whom you have contact. Recognize that some of these behaviors occur in almost any retarded population.

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   1. Why is it generally a poor practice to label a child's behavior?
   2. When might a label that describes a class of behaviors be used, and for what purpose?

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2. Recognize that an insufficiently structured program results in a number of problems beyond those mentioned in the film. There are two basic problems in any institutional setting:

   a. A low staff-to-patient ratio does not allow the attendant staff time to provide individual training for the residents in self-care and social skills.

   b. The time-consuming need for custodial service does not allow for the systematic consideration of individual behaviors. This results in inconsistent handling of the patients' behaviors.

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   1. Does a low staff-to-patient ratio necessarily mean that attendants cannot systematize their approach to the patients?
   2. Although it is initially time-consuming to train each child as an individual, the end product is more desirable than years of custodial care.
   3. What types of problems that are found in an institution might also be common in a Day Training Center?

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3. In almost any setting, the behavior that is most likely to receive attention is disruptive behavior--whether it be aggression, tantrums or a child that will simply not remain in his seat. The "good" child is typically the quiet child who causes no problems. Consequently, the child that is good is the child that is most frequently ignored.

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1. What types of treatment procedures might be applied to eliminate disruptive behavior?

2. Discuss what most adults typically do in response to a child's disruptive behavior.

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4. The narrator describes fecal smearing and the tearing of clothing as conditions which "fulfill a need". Notice, however, that there does not seem to be very much else for the children to do.

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1. Consider also that "fulfilling a need" might also be analyzed in terms of positive reinforcement or self-reinforcing events.

2. Discuss the use of incompatible-behavior training.

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5. Watch for instances of aggressive behavior and how it is described by the narrator.

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1. Discuss in terms of reinforcement theory.

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6. The narrator briefly mentions "basic needs"--: food and mothering. Later in the film notice how the systematic use of these are effectively used to change behavior.

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1. Discuss contingent and non-contingent reinforcement: is it abusive to manipulate such basic reinforcers? Is it therapeutic to require contingencies--consider the outside world.

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7. Watch for the example of the child who uses her fingers to eat her food although she "knows how to use her spoon". The narrator briefly discusses this in terms of motivation: the individual must be motivated in order to form appropriate patterns of behavior.

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1. Consider how basically simple but subtle it is to restructure a unit of the environment so that a child is motivated to take responsibility for his own behavior.

   This restructuring should take the form of systematically providing a consequence contingent on a response.

2. Motivation might be considered as creating an environment in which the child is reinforced for engaging in appropriate behavior.

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8. Watch the pre-program toilet training segment of the film carefully.

   a. Notice the occurance of imitative behaviors.

   b. Look for examples of poor behavioral programming (i.e., toilet training).

   c. Contrast this segment of the film to the later sequence on toilet training.

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1. Many of the disruptive or bizarre behaviors that children display are imitative. Why do retarded children seem to more frequently imitate each other rather than the adults with whom they interact?

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9. When the project was initiated, notice that although the whole day was programmed, the schedule was flexible depending upon each individual's behavioral deficits and excesses.

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1. Stress the importance of a structured, yet flexible schedule.

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10. Notice that not only are the girls reinforced for exhibiting appropriate behaviors, but also that the staff members are reinforced by the girls' progress.

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1. Discuss mutually reinforcing events.

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11. The segment of film on following directions is a good example of an application of the shaping principle.

    Watch for the following steps:

    a. The terminal behavior of the child responding appropriately to instructions is defined.

    b. The procedure used is differential reinforcement of successive approximations to that terminal behavior.

        1. Initially, every unit of behavior that remotely resembles the terminal behavior is reinforced with candy and social attention.

        2. As the child more frequently emits approximations to the desired response, he is gradually required to do more for a reinforcer.

        3. The child is then reinforced on an intermittent schedule, so that every response is no longer reinforced, yet the terminal behavior is maintained.

    c. Notice that the attendants initially use very exaggerated gestures and required only one response for each reinforcement. Later, as the child showed progress, the gestures were slowly faded until the child was responding to verbal instructions alone.

12. There are four rules for shaping and maintaining behavior stated in the film:

    a. Immediacy of reinforcement

    b. Initially, reinforce every approximation to the defined terminal behavior.

    c. Gradually require more appropriate behavior.

    d. Later less reinforcement can be used to maintain the behavior.

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1. Discuss the four rules more fully.

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13. Notice, in the example of the child licking the table, that the attendant completely ignores that behavior. Was this an appropriate procedure?

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1. Consider the types of behaviors to which this procedure might apply.

2. Discuss when inattention (extinction) as opposed to punishment is appropriate.

3. Discuss events that are self-reinforcing.

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14. The procedures used by the attendant in teaching the child to dress herself are another example of shaping. Consider these points from this particular segment:

    a. Each child's BASELINE ability is ascertained prior to any attempt at training. This provides an objective record of performance.

    b. An individual treatment program is designed for each child, based on his base rate functioning.

    c. The basic procedure is the same as that used in teaching children to follow directions.

        1. Note the use of hand prompts, instructions, candies and social attention.

        2. The terminal behavior is defined as the child dressing herself.

    d. The step by step, unit by unit (successive approximation) procedure is again used.

    e. After the simple responses were learned they were "chained" together.

15. The narrator speaks of "bridging the gap" between the delivery of the primary reinforcer (candy) and the completion of the desired response by the use of a conditioned reinforcer-verbal praise.

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1. Discuss this more fully in terms of pairing the praise with the reinforcer.

16. The narrator states that it is very important to NOT reinforce a child for something that he did not do. Watch the attendant carefully.

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1. Discuss adventitious reinforcement.

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17. Recognize that it is critical to not skip steps in shaping a behavior.

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1. If a procedure appears to be failing, the steps in the procedure may be too large.

2. Discuss what might happen to the behavior of both the teacher and the child should the teacher not recognize that the steps in the procedure are too large.

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18. The mealtime segment of the film makes some interesting points:

a. Remember the child is the first mealtime segment who used her fingers to eat. Notice the consequence used to teach the response of eating with a spoon.

b. "Bad" eating behavior is punished by the use of a RESPONSE COST procedure:

1. By removing the child from the situation.
2. By removing the child's food tray.

c. Notice that multiply-handicapped children were also expected to behavior appropriately.

d. Notice that the attendant continued to pass out food trays even though one of the girls was emitting rather bizarre behavior. Was this appropriate?

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1. Discuss food deprivation as a motivating device, i.e., is it abusive to deprive a child of a meal if he is able to perform appropriate behaviors, etc?

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19. By the end of the seven week project, food was being served family style, and social reinforcement was the conditioned reinforcer that maintained appropriate eating behavior.

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1. Discuss the power of social attention both when it is used appropriately and inappropriately.

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20. When the blind and deaf child was being taught to play, i.e., to use her other senses, notice that there was no one visibly reinforcing her for her attempts at self-initiated play.

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1. Discuss responses that produce their own reinforcement.

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21. In the second toilet training sequence--look for these five points:

    a. The girls are given frequent opportunities to use the toilet.

    b. They are left on the toilet no longer than ten minutes.

    c. Any attempt by a child to help herself is reinforced.

    d. Any eliminative behavior is reinforced.

    e. Any attempt by a child to help herself is again reinforced.

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1. Discuss the importance of allowing a child time to emit a response, although at the time it may seem easier to "do it yourself". Is it abusive to not allow a child the time to make a response.

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22. Again, the narrator states that although edible reinforcers were used initially, that by the time that the seven weeks of the project were up many of the girls' desirable behaviors were being maintained by social reinforcement alone. Why terminate the use of material or primary reinforcers?

READING AND WRITING ASSIGNMENT

PRINCIPLES OF BEHAVIOR I AND II

1. Two variables that influence the effectiveness of a reinforcer are ______________ and ______________. (There are more than two possible answers.)

2. When we take the children out for recess, I've noticed that Lucy always goes to a corner of the play yard and sits. I've also noticed that pretty soon one or two teachers will wander over and try to get Lucy to play with some of the other children. By the time recess is over Lucy has not interacted with any of the other children, but sure has received a lot of attention for not playing. We teachers have decided to leave Lucy alone in the corner, but if she makes any attempt to play with one of the other children, we will go over and pay attention to Lucy.

   The process we are going to use to increase Lucy's social interaction is called c______________________ reinforcement, because we are going to require that a defined response (Lucy's attempts at social interaction) occur before we present the reinforcer (our attention).

3. An event may not be called a reinforcer unless it ______________ the future frequency of the response that it follows.

4. Calliope suddenly leaps to her feet in the lunch room and utters a blood-curdling shriek. She has never done this before. You go to her, determine that there is nothing physically wrong and then walk away. A few minutes later Calliope repeats her performance.

   What should you do and why?

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5. A ______________ increases the future frequency of the behavior that it follows.

6. You have decided to no longer pay attention to Eloise when she has tantrums.

This procedure of withholding a reinforcer for a particular response is called an ______________________ procedure.

7. Candy and cereal bits are examples of unlearned reinforcers. Another term for a reinforcer that does not need to be paired with a second event in order to be effective in a (an) p____________________________________ reinforcer.

8. If we wish to change a behavior, we might follow the desired response with a reinforcing event. Requiring that a defined response occur before a reinforcer is given for that response is called c_____________________________ reinforcement.

9. The effectiveness of a reinforcing event is relative to time, ___________________ and ___________________.

10. By pairing a piece of candy with a hug, you have used two types of reinforcers. They are _________________________ and ________________ reinforcers.

11. Milhouse appears to have no inkling of what the bathroom is for. He is often wet or soiled when you take him to the bathroom. The Poppe Project described five steps that were effective in toilet-training those children. Relate those steps to the problems that you are having with Milhouse.

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12. An event that you think might be a reinforcer cannot be called a reinforcer unless it _________________________ the behavior that it follows.

13. There are two prerequisites for using an extinction procedure as a method of consequating an inappropriate behavior. Identify each and briefly tell why each is necessary.

14. Julie loves her little blue blanket and is, in fact, seldom seen without it. Julie also has frequent temper tantrums which occur without any apparent reason. You decide that the next time that a tantrum occurs, you will remove the blanket from her until she stops.

Removing a positive reinforcer contingent upon a response is called ______________________.

15. Julie has another tantrum in the playroom and you take her blanket away, but do not remove her from your presence. An hour and a half later her screams are unbearable. You are afraid that she will become sick if she does not stop screaming and so you give her the blanket. She calms down immediately. You have just violated several principles. List them and describe what is likely to occur in the future.

16. G_________________________ is demonstrated when a behavior that is reinforced in one setting tends to occur in another setting.

17. Some stereotyped inappropriate behaviors such as rocking, odd finger movements, etc., may well be a result of acc_______________ reinforcement.

18. Social reinforcement such as attention, smiling, and physical contact are examples of co____________________ reinforcers.

19. If we decide to use a response cost procedure each and every time that an inappropriate behavior occurs we are using ____________________ punishment, that is, we are following a defined response closely in time with a defined punisher.

20. When you try to teach John to eat with a spoon he performs very poorly. Yet when other teachers work with him he performs very well. Why might John respond differently in your presence than in the other teachers?

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21. You have observed that Fern frequently throws food in the dining room. After removing her several times from the dining room following food-throwing, you find that she engages in this behavior less and less. Removing Fern from the dining room is an example of a T__________ O__________ procedure.

22. Minerva has finally learned to defecate when placed on the toilet. She occasionally soils in places other than the bathroom. This suggests that the s____________________ control exerted by certain settings is not perfect.

23. Extinction and punishment procedures have the desired effect of decreasing behavior. What is the difference between the two procedures?

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24. A reinforcer increases the frequency of the behavior it follows whereas a punisher ____________________ the frequency of the behavior it follows.

25. Generalized reinforcers are effective because they allow access to __________________ kinds of reinforcers.

26. Linda frequently engages in self-abusive behavior. The backs of her hands are often torn and bleeding.

Describe why you might not use an extinction procedure for this behavior.

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27. An extinction procedure will frequently result in an __________ and then later a ____________ in that behavior.

SHAPING: "A method of reinforcing successive approximations to a terminal behavior." This procedure is often used to establish small units of behavior that cannot be produced with instructions or modeling.

STEPS IN THE SHAPING PROCEDURE	APPLICATION OF THE SHAPING PROCEDURE
1. Define the terminal behavior the child is to exhibit.	1. When the sign for "come" is given, the child is to stand up from his chair and come within an arm's length of the teacher
2. Determine a list of intermediate behaviors that successively approximate (come close to resembling) the terminal behavior. Following this list will allow you to teach the successive approximations in the appropriate order.	2. a. Looks toward the teacher b. Begins to stand up c. Stands up d. Takes steps toward teacher e. Moves halfway towards teacher f. Comes within arm's length of the teacher
3. When the first behavior or an approximation to the first behavior in the list occurs, reinforce the child immediately.	3. Give the child a piece of candy and social attention as soon as he looks at the teacher giving the sign. The reinforcers must be presented immediately so stand one large step away from and in front of the child.
4. Continue to reinforce the child for his behavior until it occurs consistently.	4. Continue to reinforce the child with candy each time that he attends to the sign until he always attends when the sign is given.
5. Raise the criterion for reinforcement. Require the child to emit the next behavior in the list before reinforcing him.	5. Now that he is attending go to 2b. and require that he begin to stand up. As soon as he is attending and begins to sta up he should be reinforced.

6.	Continue in this manner. As the child consistently emits another behavior in the list, require his behavior to become more like the desired behavior before presenting reinforcement.	6.	If almost every time the sign for "come" is given, the child looks at the teacher and begins to stand up, raise the criteria so that the child must stand up completely in order to receive reinforcement. Then require him to take a step in the direction of the teacher. When he does this consistently require him to move half way to the teacher, and finally to within arm' length of the teacher before he receives reinforcement.
7.	If any intermediate step appears to be too large for a particular child, that step should be broken down.	7.	If the child is consistently standing up when the sign is given, but never takes a step in the direction of the teacher, that step might be broken down into something like this: a. Turns upper portion of body in direction of teacher. b. Turns one foot in direction of teacher c. Turns the other foot in direction of teacher. d. Lifts one foot. e. Places foot a few inches in front of himself.

Do not raise criteria too quickly or the child may not be able to respond as reqired, and you will have to go back to the previous step. If for any reason the child is not able to perform appropriately, the criteria should be lowered so that the child can be reinforced. If at any time the child emits a behavior that is higher on the list than the one that is presently required, reinforce him. The shaping procedure may procede more quickly this way.

ADING: A gradual change in the stimulus conditions preceding a given response which results in a transfer of stimulus control from one stimulus to another.

In a fading procedure, the terminal behavior is maintained, but the stimulus conditions which precede the response are gradually changed.

TEPS IN THE FADING PROCEDURE

. Define the terminal behavior that the child is to exhibit, and the terminal stimulus conditions that the child will respond to.

. Use verbal and physical prompts so that the child emits the terminal behavior and receives reinforcement for completing the response.

. Maintain the verbal and physical prompts until the terminal behavior is easily occurring with some frequency.

. Begin the fading procedure. Gradually alter the stimulus conditions so that the terminal behavior remains the same, but less help is offered by the teacher.

FADING A PHYSICAL PROMPT

1. Upon being given a form board with five pieces of different shapes, the child will place each of the five shapes in their correct spaces without assistance from the teacher.

2. The child has been shaped to reliably place the five shapes into their spaces. He will only do so when the teacher holds onto the back of his hand. Therefore, it is necessary to fade the teacher's assistance.

   a. Hold his hand until he completes the terminal behavior.

   b. Reinforce him with a bit of candy and a hug or pat as he completes the terminal behavior.

3. Repeat the two steps, (a) and (b) until the child reliably finishes the task.

4a. Completely assist the child as he places each of the first four shapes in place. As he places the fifth shape in place, slightly decrease the pressure of your hand on his and also move your hand slightly toward his wrist.

b. Reinforce the child with a pat and/or hug and a bit of candy as soon as he slips the fifth piece into its place.

5. Continue to alter the stimulus conditions that precede the terminal behavior until the child is able to complete the response without the prompt.	5a. Continue to gradually decrease the pressure of your hand and move it toward the wrist as he completes the terminal response. 1) By the time your fingertips reach the child's wrist and forearm area only one or two fingers should be touching the child as he completes the response. 2) Move your hand completely away and reinforce the child as he completes the task If he has vision, keep your hand near but not touching his. b. Now begin to fade assistance on the fourth shape just as you did on the last shape. 1) Gradually reduce hand pressure and proximity. 2) Reinforce the child as he completes the task by placing the fifth shape in the form board. c. Continue these steps with the third, second and first shape. As the child learns to complete the task with less and less assistance you should be able to fade your assistance on the third, second and first shapes more rapidly than on the fourth and fifth shapes.

5. Continued

d. The fading of the physical prompt is completed.

   1) Place the form board and shapes in front of the child.

   2) The child should place the five shapes in the board without assistance.

   3) Reinforce him as he completes the task.

RESPONSE CHAINING: A procedure that utilizes shaping and fading to teach a complex sequence of behavior.

STEPS IN THE CHAINING PROCEDURE	SPECIFIC APPLICATION OF THE CHAINING PROCEDURE
1. Define the terminal behavior the child is to exhibit.	1. The child is to scoop food on a spoon, bring the spoon to his mouth and place the food in his mouth using only one hand and without spilling.
2. Determine the sequence of behaviors that comprise the complex chain.	2. a. Bring spoon to plate b. Scoop food on spoon c. Lift spoon in direction of mouth d. Bring spoon half way to mouth e. Bring spoon to mouth f. Place food in the mouth g. Replace spoon without spilling.
3. Totally help the child complete all but the last response in the sequence and reinforce him immediately upon the completion of that task.	3. Stand behind the child and help him with the first steps in the chain of behaviors. When the spoon is near his mouth, reduce the amount of help he is given to place the food in his mouth. The food in the mouth will serve as a primary reinforcer. If the food does not appear to be a strong reinforcer, the child may also be given a candy. Social reinforcement should always accompany completion of the task.
a. Each behavior in the chain will need to be shaped. b. The amount of help given for each behavior in the chain will need to be faded.	a. The child may initially spill food or in some other way complete the task unsuccessfully. If this happens, placing food in the mouth will have to be shaped. To do this socially, reinforce any attempt to complete the task. Gradually require the child to become more and more efficient in placing the food in his mouth before reinforcing him.

3. Cont.	3. b. Do not immediately require the child to go from total help to no help. The amount of help the child is given on each behavior in the chain will need to be gradually reduced. This should be done by gradually moving your hand from the child's hand to his elbow and grasping the child more lightly.
4. When the child can successfully complete the last behavior in the chain, reduce the amount of help he is given so that he will now be required to complete the last two behaviors in the chain. He should be socially reinforced for completing the first behavior and should receive a primary reinforcer for completing the last behavior.	4. Now that the child can successfully place the food in his mouth when the spoon is near his mouth, reduce the amount of help the child is given when the spoon has been brought half way to his mouth. The child will now have to bring the spoon the rest of the way to his mouth and place the food in his mouth. When the child brings the spoon near his mouth he should be given social reinforcement. When he places the food in his mouth he will automatically receive a primary reinforcer, but social reinforcement should also be presented.
5. The next to the last behavior in the chain will also have to be shaped. It is possible to use the child's opportunity to engage in the last behavior as a reinforcer.	5. If the child does a poor job of bringing the spoon to his mouth remove the spoon from his hand and do not allow the child to place the food in his mouth. When the child successfully brings the food to his mouth, present social reinforcement and allow the child to place the food in his mouth.
6. Repeat Steps 4, 5 and 6 until each behavior in the chain has been learned.	6. When the child can bring his spoon to his mouth, reduce the amount of help he gets when the spoon has been lifted in the direction of his mouth. Now teach him to

6. Cont.	6. Cont.-- bring the spoon half way to his mouth. (He can all ready bring the spoon the rest of the way to his mouth and place the food in his mouth.) When this response has been successfully shaped, add another requirement to the chain. As each new behavior is added to the chain it should be shaped and a new behavior added until all of the behaviors in the chain have been learned.
7. Each behavior should be socially reinforced and reinforced with the opportunity to engage in the next behavior in the chain. Primary and social reinforcement should follow the completion of the entire chain.	7. The child (a) brings the spoon to his plate. He is socially reinforced and allowed to (b) scoop food on his spoon. When he does this he is again praised and allowed to (c) lift the spoon in the direction of his mouth. When he completes this task he is praised and allowed to (d) bring the spoon half way to his mouth. When this task is completed he is socially reinforced and allowed to (e) bring the spoon all the way to his mouth. When he has done this he should be socially reinforced and be allowed to (f) place the food in his mouth. This behavior will receive primary as well as social reinforcement.

In the chaining procedure the last behavior in the chain is always taught first. If after many trials, the child does not make any progress in a particular behavior in the chain, it will be necessary to make fading a more gradual procedure, or to return to an earlier portion of the chain.

INSTRUCTIONAL CONTROL: The use of prompts or instructions to control behavior. Instructional control is a valuable asset, but most children must be taught to follow instructions. Whether or not a formal training procedure is needed will depend on the child.

STEPS IN THE DEVELOPMENT OF INSTRUCTIONAL CONTROL	APPLICATION OF INSTRUCTIONAL CONTROL
1. Determine the response that is to come under the differential control of instructions, and operationally define it. (Once the instruction has been determined, it is appropriate to use variations on it so that the children will respond to the variations as well as the defined instruction.)	1. Lining up for an activity, defined as the child going to the line and standing so that he is facing the back of the person in front of him when instructed to "line up" or to "get in line". If the child is the first person in line he should face the teacher and remain in the line until the rest of the group is in line.
2. Teach the response using the instructions paired with physical prompts.	2. a. Instruct the child to "line up". Stand behind him and move him down all of the way into line. b. Reinforce him with a piece of candy and social attention.
3. Eliminate the physical prompts by using a fading procedure.	3. a. Take the child three-quarters of the way to the line--then one-half of the way to the line and then let him complete the task by himself from his starting point in the room. b. Maintain the instructions, and reinforce the child for completing the task as instructed.
4. The response should be under the stimulus control of the instruction, so that the child performs the defined behavior when instructed.	4. Upon being called to "line up", the child should go to the line.

MODELING AND IMITATION: Teaching a child to respond in a way that is similar to that of a model. Gaining imitative control is a first step to gaining instructional control.

STEPS IN DEVELOPING IMITATION	SPECIFIC APPLICATION OF DEVELOPING IMITATION
1. Determine which behaviors the child is to imitate upon command. They should be presented in order from simple to more complex responses.	1. Put hands over head. Place hands on table. Clap hands. Place forefinger on objects. Pick up and move objects.
2. The teacher sits close to the child and waits for the child to look at her. Initially the child is reinforced for looking.	2. If the child does not look at the teacher, he may prompt him by saying "look at me". The child should be reinforced for looking.
3. The teacher instructs the child "Do this", and emits the first behavior. If the child imitated this behavior, he is immediately reinforced.	3. The teacher says, "Do this" and puts her hands over her head. If the child then puts his hands over his head, he is immediately given a candy and is praised.
4. If the child does not imitate the teacher, the teacher provides physical prompts, and then reinforces the child.	4. If the child does not put his hands over his head, the teacher grasps the child's hands and pulls them over his head. The child is then given candy and social reinforcement.
5. A fading procedure is used to reduce the physical prompts so that the child will imitate the model when only the verbal command, "Do this" is presented. The child is reinforced whenever his behavior is similar to that of the model.	5. Each time the teacher says "Do this" and puts her hands over her head, she gradually decreases the amount of help she gives the child. The child is reinforced each time the position of his arms is similar to that of the teacher.

6. When the child reliably imitates the model response, introduce the next response that he is to imitate.	6. Each time the teacher puts her hands over her head, the child imitates her without the aid of physical prompts. The teacher can model by placing her hand on the table for the child to imitate.
7. When the child has learned to imitate a new response, continue to intermittently present the previously learned responses so that the child can learn to discriminate among the veral commands.	7. When the child has learned to imitate placing hands on a table, he should sometimes still be required to imitate "put hands over head."

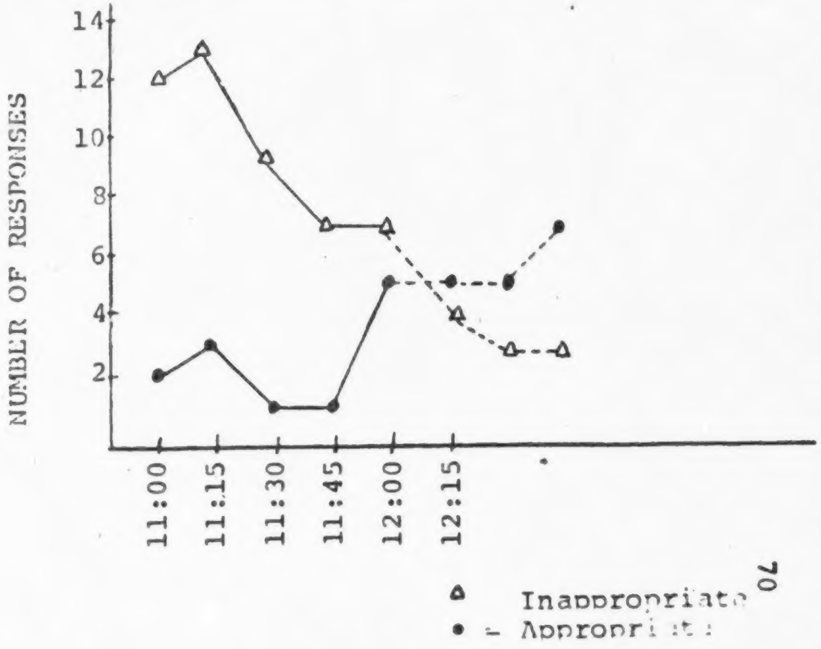
Each time the child has learned to imitate another behavior, repeat steps two through seven with the next behavior in the list. As the child learns to imitate more and more responses, fewer physical prompts should be necessary to teach the imitation of a new response, until only the command "Do this" will result in the imitation of the new model.

REINFORCEMENT OF INCOMPATIBLE BEHAVIOR: Reinforcement of behaviors that are incompatible with a response to be eliminated. The response to be eliminated is treated with an extinction procedure. This procedure is used to teach a child behaviors that cannot occur at the same time as the inappropriate behavior.

STEPS TO USE REINFORCEMENT OF INCOMPATIBLE BEHAVIOR	APPLICATION OF REINFORCEMENT OF INCOMPATIBLE BEHAVIOR
1. Select and define the behavior that is to be treated with an extinction procedure.	1. Terry consistently claps his hands while he is seated at the worktable. Handclapping will be defined as any occurence of handclapping that interferes with work or play activities at the worktable or anywhere else in the room. Handclapping which occurs at appropriate times will not be recorded.
2. Select and define behaviors that are incompatible with the behavior to be treated with extinction--behaviors that should always be reinforced. This category is not exclusive, but should only provide guidelines for behaviors that cannot occur when the undesirable behavior is occurring, and should thus be given attention systematically when they do occur.	2. Define behaviors incompatible with handclapping: a. Sitting, with hands on lap or on table for 10 or more seconds. b. Sitting, with hands engaged in manipulating a toy or piece of work for 10 seconds or more. c. Standing, with hands not engaged in handclapping behavior for 10 seconds or more. d. Standing, with hands engaged in manipulating toy or work object for 10 seconds or more. e. Other behaviors that are incompatible with inappropriate handclapping (as defined).

3. Systematically use a positive reinforcement procedure with behavior that is appropriate. Always ignore the behavior that is to be extinguished.	3. When Terry emits the handclapping response he should be totally ignored. Any occurence of a behavior that is incompatible with the handclapping response should be positively reinforced.
4. Record the occurence of the behaviors to be measured.	4.
5. Plot the data.	

	Inappropriate	Appropriate 10" or more duration
11:00-11:15	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓
11:15-11:30	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓
11:30-11:45	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓
11:45-12:00	✓ ✓ ✓ ✓ ✓ ✓ ✓	✓
12:00-12:15	✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓



TIME OUT: A procedure which involves placing an individual in a condition in which he will not come into contact with any reinforcing events.
Time out is typically used as a consequence for undesirable behavior. If it does not decrease the behavior that it follows it should be discontinued and another treatment for the behavior should be attempted.

STEPS IN THE TIME OUT PROCEDURE

1. Determine the area that will be used for time out, and always have that place free. The area should not contain any toys, books, furniture, etc. in the event that the child is aggressive when placed in the area.

   The main purpose of a time out procedure is to place the child into a neutral, nonreinforcing environment dependent upon his emitting a behavior that should not be allowed to occur in the future.

2. Define the types of behaviors that will be treated with the time out procedure. These behaviors must be consistently defined by all staff members together in order to avoid confusion. Immediacy and consistency are the two critical factors in treating any behavior, and behavior that warrants time out is no exception.

APPLICATION OF THE TIME OUT PROCEDURE

1. The time out area might be one or all of the following:

   a. A lighted, ventilated closet.

   b. A lighted, ventilated room that is empty

   c. A sturdy booth that is expressly constructed to use as a time out booth.

   d. In lieu of all else, a chair may be so positioned that it is facing a corner of the room.

2. Behaviors that are most frequently treated with time out are the following:
   a. Aggressive Behavior-- defined as any occurrence of biting, hiting, kicking, scratching, spitting, throwing objects not meant to be thrown, etc., directed towards:
      1) Other children
      2) The environment
      3) Staff or visitors
      4) Towards self.

   b. Tantrum Behavior-- defined as any occurrence of screaming, crying, falling about, throwing self on the floor, etc. that is very disruptive to everyone in general. A tantrum may also include throwing objects or striking others.

2. (Cont.)	2. c. Other - defined as responses that may be individual to a given child.
3. Define the problem and exact procedure that each staff member will follow in using time out for each child. All staff should be aware of the procedure to be used and the behaviors to be consequated with time out. a. Describe the problem	3. a. Millicent frequently hits other children hard enough to make them cry. She kicks and bites less frequently, but often enough to be disruptive at least twice a day. When she is reprimanded, she will often display tantrum behavior in which she screams, kicks, and knocks furniture over. We have tried ignoring her, spanking her and talking to her, but none of them seem to work.
b. Define the behaviors that will be consequated with time out.	b. Define the behaviors to be consequated with time out - 1. Aggressive Behavior - defined as any occurence of hitting another child other than in self-defense, kicking another child or a staff member - (kicking inanimate objects is not recorded unless it is part of a tantrum episode), or biting another child or staff member. No other aggressive behaviors will be recorded. 2. Tantrum Behavior - defined as any occurence of screaming, crying, knocking furniture or people over, etc., singularly or altogether.

3. c. Define the time out procedure to be used by the staff.

3. c. Define the exact procedure that all staff will follow when placing Millicent into time out.

Aggressive Behavior

1. Upon the first occurence of aggressive behavior Millicent will be told only, "You hit Lucy" or "You kicked Tommy"--nothing more.

2. She will be immediately taken to the time out area and placed inside with as little additional attention as possible.

3. She will remain in time out for a minimum of five minutes.

    a. If she is quiet at the end of five minutes, she can come out of time out.

    b. If she is exhibiting tantrum behavior or is otherwise disruptive at the end of five minutes, she is to remain in time out until after the termination of her disruptive behavior.

4. Subsequent occurences of aggressive behavior will be treated in the same way.

    a. She should not be spoken to upon subsequent occurences of aggressive behavior, but rather simply placed into the time out area.

3. Cont.

3. Cont.

5. Record data in the time out log book.

Tantrum Behavior

1. Any occurence of tantrum behavior should be treated in the same way as aggressive behavior.
    a. She should be placed in time out immediately when the tantrum behavior is exhibited.
    b. She should remain in time out for a minimum of five minutes or until her disruptive behavior ceases.
    c. Subsequent occurences of the behavior should be treated in the same manner.

4. Record all data for each child in a log book.
    a. This provides a permanent record of the use of the time out room, so that it may easily be reviewed for its effectiveness with each child.
    b. Should the use of time out be reviewed in your Center, there will be a permanent record for referral.

4.

NAME	DATE	TIME IN	TIME OUT	REASON	INIT
Millicent Q	7/6/70	11:10 am	11:17 am	aggressive tow. Tommy D.	lm
Millicent Q	7/6/70	1:00 pm	1:05 pm	Tantrum	lm
Tommy D	7/6/70	2:05 pm	2:10 pm	Tantrum	lm

I. Time Out is effective as a procedure for decreasing undesirable behavior if -

  a. It is used immediately.

  b. It is used consistently.

  c. The child receives as little attention as possible when he is placed in the time out area.

  d. The child is told why he is being placed in time out once and only once.

II. Time Out is ineffective as a procedure for decreasing undesirable behavior if -

  a. It is not used upon the occurence of the behavior it was prescribed to follow.

  b. It is used inconsistently - either for behaviors other than for which it is prescribed, or only once in a while following the behavior for which it is prescribed.

  c. The child's behavior is discussed with him either as he is placed in the time out area or when he is removed from time out. Either condition may serve as delayed reinforcement for the undesirable behavior.

RESPONSE COST: A procedure in which undesirable behavior is mildly punished by the removal of positive reinforcer.

STEPS IN THE RESPONSE COST PROCEDURE	SPECIFIC APPLICATION OF THE RESPONSE COST PROCEDURE
1. Define the inappropriate behavior that is to be consequated with response cost.	1. Stealing food from other children. Defined as: forceably taking any food from another child's plate or hand.
2. Determine what reinforcer will be removed contingent on the inappropriate behavior.	2. Whenever stealing occurs the child's food will be moved out of his reach. Be sure to remove not only his plate but also any food he may have in his hands.
3. Immediately after the inappropriate behavior occurs remove the reinforcer and be certain not to present any other reinforcer.	3. The minute a child steals another child's food, his plate of food and any other food he may have in his hand is moved out of his reach. Be sure not to give him any attention or other form of reinforcement when removing the food.
4. When the child again behaves appropriately, he may again be reinforced.	4. When the child has remained seated without displaying any other inappropriate behaviors (stealing, tantrums, aggression, etc.) for some predetermined length of time, his plate of food should be returned.
5. Any subsequent occurence of the inappropriate behavior should be treated in the same way.	5. Any subsequent occurence of stealing should be treated in the same manner.

In order for the response cost procedure to be effective the reinforcer must be removed immediately after the occurence of the inappropriate behavior and with as little attention as possible. The child must not be allowed to come in contact with any other reinforcers until he is again behaving appropriately.

Azrin Method of Rapid Toilet Training - Adapted for Use with Blind and Deaf Children

Toilet training may be viewed as a complex operant and social learning process. Positive reinforcement is given for appropriate elimination and inhibitory training for incontinence.

I. Recording Data

A. Baseline

1. A record is to be kept of accidents occurring during the day for three days prior to the start of training. Each child is checked every hour for eight hours on each of these baseline days.

2. If a child's pants are observed to be wet or soiled between regularly scheduled checks, they are changed and the incontinency is indicated on the child's chart.

B. During training, recorded on each child's chart is the daily frequency of wetting pants (WP), soiling pants (SP), urinating in the toilet (UT) and defecating in the toilet (DT).

II. General Procedure

A. Child is to remain in the toilet area for the eight hour session and is to be seated within one meter from the toilet bowls.

B. Child wears wet-alarm pants.

C. Toilet is equipped with toilet signal chair.

III. Training Procedure

A. When no accidents occur

1. Child is seated near the toilet bowl when not seated on the toilet bowl.

2. Child is given fluids every 1/2 hour; as much as he will drink each 1/2 hour.

3. Every 1/2 hour the child is guided to the toilet bowl by walking beside him and holding him. In each case the child's hands are placed on the bowl to identify it to him. He is then guided through the task of undressing and sitting on the toilet where he remains for 20 minutes or until he eliminates.

4. When the child eliminates in the toilet, he is touched, hugged and given edibles. Reinforce the child as soon

as the toilet sound's signals.

5. Child is then guided through the task of dressing and returning to his seat.

6. For each five minute period between scheduled toiletings that the child remains continent he is hugged and given edible reinforcers.

7. Gradually fade out the assistance given the child while approaching the toilet, undressing, dressing, and returning to his seat. Always use the minimal prompts necessary to elicit the behavior. If the child doesn't respond, more guidance may be necessary; but then resume fading again.

B. When accidents occur

1. When pants alarm goes off the trainer knows that the child wet or soiled his pants. The trainer immediately shakes the child to get the child's attention and to punish the incontinent behavior.

2. Child is guided through the task of undressing.

3. Child is given a tepid shower.

4. Child is guided through the task of dressing.

5. Remember: Use the minimal prompts necessary to elicit the behavior. Attempt to fade out the amount of assistance given the child in undressing and dressing.

6. Child is placed in one hour time out.

   a. No affection or edibles every five minutes.
   b. Chair is removed.
   c. No fluids given every 30 minutes.
   d. Regularly scheduled toileting every 30 minutes is maintained.

IV. Maintenance Procedure

A. Child is checked before meals (three times daily) and at bed time.

B. If dry, display affection (hug and kiss) and deliver the meal or continue with bed time preparation.

C. If wet or soiled, display disapproval (shake the child in punishment), have him undress, shower and dress, delay meal for one hour.

D. When child is continent for one month, discontinue inspections but have the child undress, shower, and dress when accidents are detected.

Abstracted from:

Azrin, N. H., Bugle, C., and O'Brien, F. "Behavioral engineering: Two apparatuses for toilet training retarded children." Journal of Applied Behavior Analysis, 1971, 4, (3), 249-253.

SELF-CARE: WASHING HANDS

PRETEST

1. Hand child a bar of soap.
2. Turn water on.
3. Instruct child to "wash your hands".
4. Record data.
5. Repeat steps 1-3 five times.

TRIALS	CHILD HOLDS SOAP	WET HANDS	LATHER HANDS	RINSE HANDS	DRY HANDS
1					
2					
3					
4					
5					

The instructions, "wash your hands" contain a complex set of responses that the child must perform. They are: (1) Turning on the water (2) Wetting the hands (3)Picking up the soap (4) Soaping the hands (5) Putting the soap down (6) scrubbing (7) Rinsing the hands (8) Turning off the water and (9) Drying the hands.

The following is a chaining procedure which requires the child to complete only the last step of a task in order to be reinforced. Each successive step is then added or linked onto the chain. When the child has successfully completed the training procedure, he will respond to the instructions, "Wash your hands" by washing his hands.

Notice that the child is required only to complete very small steps of the behavior at a time, beginning with the very last step - turning the water off.

STEP ONE: Turning The Water Off

1. Wash the child's hands for him with soap and water.
2. Before you dry his hands, place his hand on the faucet.
3. Instruct him to "Turn the water off, please".
4. If the child complies or attempts to comply, R+ him with primaries and social attention.

5. If the child does not comply, place your hand on his and repeat the instruction while turning the water off. Reinforce him.

6. Gradually decrease the force of your directing movements each time you require the child to turn off the water so that finally he is turning off the water himself upon request.

7. Criterion is turning off the faucet five times in a row without your assistance.

STEP TWO: Drying Hands

1. Have the child wet hands, turn water off and instruct him to dry them with a towel.

2. If he does dry them, reinforce him.

3. If he fails to dry hands, assist him by holding his hands and wiping them dry. Gradually remove assistance until child can dry hands without your assistance.

4. Repeat five times without assistance before going into next step. It is important that he be able to perform each step to your satisfaction before moving to the next step.

STEP THREE: Rinsing Hands

1. Soap child's hands and instruct him to rinse hands. If he does, reinforce him and have him then dry his hands.

2. If he fails to rinse hands, place child's hands under water, reinforce while they are under water, request him to dry his hands.

3. Gradually decrease your assistance.

4. Repeat until child can rinse and dry hands without assistance on five consecutive trials.

STEP FOUR: Soaping Hands

1. Wet child's hands and instruct him to soap his hands. If he does soap his hands, reinforce him and have child go through steps one and two.

2. If child fails to soap his hands, following fading procedures as delineated in earlier steps.

3. Criterion - five successfully completed trials in which the child soaps his hands without your assistance.

STEP FIVE: Wetting Hands

1. If the child has successfully completed Step 3, he should be able to do Step 5. The only difference is that his hands are now wet instead of soapy. You may have to prompt the child at first by sticking his hands under the water and saying wet your hands, but you should be able to quickly fade this prompt.

2. Criterion: Five consecutive trials in which the child wets his hands upon command.

STEP SIX: Turning the Water on

1. Repeat Steps 1 through 5 of "Turning the Water Off" except use the instruction "Turn the Water On, Please."

2. Reinforce for compliance!

3. Criterion is turning the faucet on five times without your assistance.

SELF CARE: BRUSHING TEETH

PRETEST (5 Trials)

1. Hand resident his toothbrush with toothpaste on it.
2. Instruct resident to "brush your teeth".
3. Record data on sheet.
4. Repeat Steps 1-3 five times.

TRIAL	PLACES TOOTHBRUSH IN MOUTH	CONTINUES TO HOLD TOOTHBRUSH IN HAND	MOVE TOOTHBRUSH IN MOUTH
1			
2			
3			
4			

/ Accomplishes task without assistance
X Resident has to be aided

TO CONDITION CHILD TO BRUSH TEETH

Step One:

1. Place toothbrush with paste on it in residents mouth.
2. Hold residents hand on brush, and instruct him to "brush your teeth."
3. Reinforce resident if he does move toothbrush back and forth in mouth.
4. If resident fails to keep his hand on toothbrush and/or fails to move brush back and forth in mouth, take his hand and guide his hand back and forth. Reinforce the child.
5. Repeat above action while you gradually reduce your assistance. Each time you initiate a new trial, instruct resident to "brush your teeth".
6. Repeat step one until the resident can brush his own teeth without your assistance.

Step Two:

1. Hand toothbrush to resident, hold paste in your hand, instruct resident to hold brush out to have you put paste on brush.

Step Two (Cont.)

2. If resident does hold out brush reinforce child and instruct him to "brush your teeth".

3. If resident fails to hold out his hand, take his hand, hold it out, reinforce child as you put paste on the toothbrush.

4. Gradually reduce assistance until child will hold out hand to have attendant put paste on toothbrush. When child will do so with only minimal assistance, start to give assistance with command "brush your teeth".

5. Criterion is met when instructed to "brush your teeth", the child will hold out brush to have paste put on brush, and brush his teeth (Step One).

SELF-CARE: BRUSHING HAIR

PRETEST

1. Hand resident a hair brush.
2. Instruct child to "brush your hair."
3. Record data.
4. Repeat Steps 1-3 five times.

TRIALS	HOLDS BRUSH	BRUSHES HAIR	HANDS BRUSH BACK
1			
2			
3			
4			
5			

/ Accomplishes task without assistance

X Resident has to be aided

TO CONDITION RESIDENT TO BRUSH HAIR

Step One:

1. Instruct resident to "brush your hair". If resident does brush hair reinforce him.
2. If resident fails to hold brush, assist resident by holding the brush in his hand and reinforce him while telling him to "brush your hair".
3. When he holds the brush in his hand, instruct resident to brush his hair.
4. If he fails to brush his hair, assist resident by holding his hand and moving brush through hair. Say "brush your hair", and reinforce child.
5. Gradually remove assistance until child will brush own hair.
6. The behavior is defined as learned when the child is instructed to brush his hair; he will take brush, and brush hair.

CHAINING DRESSING: SHIRT

TRIALS	CORRECT SIDE IS FRONT	PULL SHIRT OVER HEAD	PUT FIRST ARM IN	PUT SECOND ARM IN	PULL SHIRT DOWN
1					
2					
3					
4					
5					

= Resident accomplished task alone (no outside aid).
= Resident had to be aided.

RETEST (5 Trials)

1. Hand child the pullover shirt.
2. Instruct him to "put on your shirt".
3. Record data on child's progress.
4. Repeat 1-3 at least 5 times.

TO CHAIN THE BEHAVIOR

Step One:

1. Put shirt on child with both his arms and his head in the appropriate holes. Leave the bottom of the shirt up near the middle of the child's chest.
2. Instruct him to "pull down your shirt".
3. Reinforce immediately with primaries and social reinforcers if shirt is pulled down by the child.
4. If the child does not pull down the shirt, then take the child's hands and guide his movements until the shirt is down. Reinforce the child when the shirt is down. Be very enthusiastic.
5. Repeat Step One until the child can complete the task at least 5 times with no aid. When criterion (5perfect trials) has been met move on to Step Two.

Step Two: Left Arm

1. Place right arm in arm hole but place only a portion of the child's left hand in, the other arm hole. NOTE: Use a right to left sequence for putting arms in the shirt. Present the instruction "put your arms in". Wait a moment to see if the child will signal you with a side preference - that is, if he voluntarily chooses one arm rather than the other to put in first.
2. Repeat parts 2-4 of Step One. The instruction should be "Please put your arms in", etc.

3. Criterion - 5 trials unassisted.

Step Three: Right Arm

1. Repeat Step Two using right hand.
2. Criterion - 5 trials unassisted.

Step Four:

1. Put shirt on child with both arms in the appropriate holes, but leave the shirt on the child's head so that the shirt is below the child's eyes.
2. Instruct him to "Pull down the shirt".
3. Reinforce child for complying with your instructions.
4. Use part 4 in Step One if child does not pull down shirt.
5. Criterion - 5 trials unassisted.

Step Five:

1. Place child's arms in shirt so that the neck opening is resting on top of his head.
2. Repeat parts 2-4 of Step One.
3. Criterion - 5 trials unassisted.

REINFORCERS:

1. Initially, reinforce any attempt on the part of the child both verbally and with a primary reinforcer.
2. As he become proficient at each level, decrease the number of primary reinforcers that are delivered, and shift the emphasis to social reinforcement. Even if the child performs the task well at the beginning, reinforce him with primaries so that he initially comes in contact with the nice things that happen when he follows directions correctly and quickly.
3. Always provide social reinforcement and encouragement if the child is attempting to comply with your directions.
4. Always provide primary reinforcers at the beginning of each new step even if the child easily completes it so that he comes into contact with the reinforcers that he can gain from your presence. It is important to get a very strong response going by using the primary reinforcers initially and then decreasing the quantity.

(Dressing: Shirt)

INSTRUCTIONS: It is necessary to provide the child with several verbal directions. Try to be as consistent in your usage as possible, although you might vary the actual words that are used, be sure that the content is always the same.

1. "Pull your shirt down."
2. "Put your arm through."
3. "Put your shirt on."

EATING

The residents can be taught appropriate eating skills by using the chaining procedure. The terminal behavior that the resident is to acquire is eating food with a spoon without excessive spilling. By using the chaining procedure, the child is gradually required to emit more of the behavior by himself.

The attendant begins by placing the child's hand around the handle of the spoon, with his own hand supporting the child's. The child's hand is then guided to scoop the food on the spoon. His hand is then moved until the spoon and food are in his mouth. At this point his hand is released.

This process is repeated. The attendant's hand gradually leaves the child's hand sooner each time. The attendant's hands is originally around the child's hand, but this support should gradually be faded so that the attendant's hand is increasingly further away from the child's.

It is important to remember not to go on to the next stage until the child can reliably complete the preceding stage without spilling. Good eating behavior will be reinforced with the food itself, but its effectiveness can be strengthened by pairing the food with lots of social attention for appropriate behavior.

When the child can eat with a spoon by himself, a simple response cost procedure could be employed to reduce the number of times a resident spills food, eats with his fingers, throws food or steals food. Whenever any of the above mentioned, inappropriate behaviors occur, the resident's plate and beverage should be removed and placed out of his reach for a predetermined period of time.

The effectiveness of this procedure is dependent upon the consistency with which it is employed. If it has been decided that the child's plate should be removed for one minute each time the child spills his food, that plate should be removed for each spill.

Also implicit in this procedure is the assumption that food functions as an effective reinforcer. If it is not a powerful reinforcer, removing the food will obviously not result in a decrease in the food spilling.

EATING CORRECTLY

I. PROPER USE OF A SPOON

A. The steps are as follows:

1. Begin with the child's plate in front of him, but out of reach.

2. Give the child the plate and instruct him to pick up his spoon. Reinforce the child for attempting to comply.

3. If necessary, guide his hand to the spoon and, again if necessary. help him grasp it. Reinforce any attempt by the child. There are several methods that can be used to help the child develop this response. They depend on the individual needs.

4. Instruct him to take a bite and, if necessary help him complete the task. Verbally reinforce any attempt to comply with your instruction.

5. When the child is able to hold the spoon by himself, move your hand to his wrist, then to the forearm and then to his elbow with decreasing pressure until you are no longer in physical contact with the child. The speed with which this is accomplished will depend on the behavior of the child.

6. Should the child drop the spoon and take a bite with his fingers, either remove the plate from the child for about 10 seconds or pull the child away from the table for about the same length of time. Turn slightly away from him so that he is not receiving your attention.

7. If the child displays tantrum behavior during this time, require that he remain in the chair, but do not talk to him or return the plate until he begins to calm down. A second tantrum should result in removal from the dining room (not time out unless he aggresses).

8. DO NOT return the plate unless the child is sitting on his chair and is, at least, beginning to quiet down.

9. Periodically offer the child his milk. If he picks up the glass and drinks without problems, verbally reinforce him.

10. If he spills the milk or pours it out of the glass, take it away from him and waite for about 10 seconds before returning it to him. If the behavior is obviously inappropriate, say "NO", but only if you catch him in the act of spilling or pouring it out. Do not allow him to eat during this time.

11. It is sometimes a good idea to withhold dessert until the child has finished eating, or to use it as a reinforcer for appropriate eating behavior, presenting small bites of dessert as the child uses his spoon. Dessert may be used in two ways (or any other food that the child enjoys): This should be used in individual cases, for example, when a child will eat dessert, but very little else.

    a. As a reinforcer for eating less preferred foods; offer small bites of the preferred food contingent on his eating some of the less preferred food.

    b. As a reinforcer for appropriately completing the main portion of the meal.

B. REINFORCERS

If the child typically eats the food that is fed to him, you can be fairly sure that food is a reinforcer--now it is just a matter of verbally reinforcing him for behavior that is appropriate.

INAPPROPRIATE SOCIAL BEHAVIOR

Many residents show profound deficits in the area of social interactions. Probably a more frequent problem, however, is the fact that many residents show excessive inappropriate social behavior. Obviously some degree of social interaction is both necessary and appropriate, however, it is also obvious that the "clinging vine" and incessant talker present very serious behavioral problems. A typical explanation for this type of behavior would be to "invent" a concept such as "need for attention". This places the source of the problem *within the child* and thus offers the aide very little help in solving the problem. An alternative approach would be to try to analyze the behavior in terms of the consequences it produces in the environment. What happens to the child when he runs up and clings to an attendant or visitor? What consequences are there for incessantly talking to the attendants. One immediate answer is *social attention*. This social attention may be in the form of (1) reprimands (2) hugs and caresses, (3) answers to questions, etc. The important factor is that the child does not usually receive this attention unless he engages in the inappropriate social behavior. Residents quickly learn excessive social behavior usually produces more social attention than does appropriate social interaction.

Paying attention to this type of inappropriate behavior usually results in a termination of the behavior for the present. Given that excessive social behavior may be aversive to the ward staff, the termination reinforces the aides attending behavior. This situation usually evolves into what is known as a "viscious cycle". The resident "bugs" the aide--the aide attends to the inappropriate behavior--the resident stops behaving inappropriately. Both the resident and the aide have been reinforced--the resident by the aide's attention; the aide by the termination of the inappropriate behavior. Thus the child continues to behave inappropriately and the aide continues to attend to (reinforce) the residents excessive social behavior.

TREATMENT PROCEDURE:

(1) Based on the above discussion the most appropriate treatment procedure would be a combination of reinforcement for appropriate social behavior and extinction for inappropriate social interactions.

(2) Shaping techniques would be utilized where appropriate.

(3) At first a combination of primary reinforcers (food, etc.) and social attention would probably be most effective. Later social attention alone, could be used to maintain the appropriate behavior.

AGGRESSIVE BEHAVIOR

Aggressive behaviors may occur in many forms. It may involve one child yelling or swearing at another. A child may aggress by pushing or spitting at another child or a child may attempt to do physical harm to another child by biting, hitting, or scratching. A child may also aggress against the environment by throwing objects or destroying equipment. These types of behaviors may be maintained by many factors. The child may receive a great deal of attention for this behavior although the attention that you give is usually in the form of a reprimand, it still will act as a reinforcer for the behavior. The child may be reinforced for biting or hitting another child because it allows him access to a toy or game that the other child has. Also, it just might be fun to throw objects and destroy equipment. Aggressive behavior may also be reinforced by the removal of an aversive event. The child may get out of doing a task or complying with a request by hitting, kicking or biting another child or staff member.

Before you can begin to eliminate this behavior you must first define the behavior. Make certain that your definition is clear and specific so that anyone observing the aggressive behavior could appropriately label the behavior. For example, you decide to define three different types of aggression.

(1) Verbal aggression - swearing or yelling at another child or staff member.

(2) Mild aggression - spitting, pushing, or shoving another child or staff member.

(3) Severe aggression - biting, kicking, or hitting another child such that it might cause physical harm or injury to the child.

Any staff member could then observe the child, see if he was aggressing and if he was labeled the aggression as 1, 2, or 3. If the staff member observed the behavior and thought that the behavior was aggressive behavior but it was not included in the definition, then he could not label it as aggressive behavior. Sometimes you will find that your definition is incomplete or vague and other observers are labeling behavior that is not aggressive as aggressive behavior. If you find that enough people do not agree on labeling the behavior, you should change your definition.

Once you have decided upon your definition you must then select a procedure for eliminating the behavior. You may use extinction, differential reinforcment of other behavior (DRO), a combination of DRO and time-out, response cost or punishment.

Since the staff may not control all of the consequences for aggressive behavior, a simple extinction procedure may be ineffective in decreasing the behavior. It is also important to remember that immediately after the beginning of the extinction procedure, the aggressive responses may increase in frequency and intensity, which might result in danger to the other children.

In using a DRO procedure you must remember that to be effective you must consistently reinforce the child when he is not aggressing. When the aggression is not so severe that it might cause physical harm or injury to another child a DRO procedure would probably be the method you should use to eliminate the behavior. In using this procedure you must also remove the reinforcement for the aggressive behavior. If you are attending to the child when he yells and screams while using the DRO you will probably not eliminate the behavior.

The time-out procedure should be used in combination with the DRO when the aggressive behavior is so severe that it may cause physical injury to another child and/or the DRO alone is not effective in eliminating the behavior. In using the time out procedure, one must remember that the child should be quickly and efficiently placed in the time out area immediately after the occurrence of an aggressive response. One must also never forget to reinforce the child when he is not aggressing. Time out without reinforcement for other appropriate behavior will not be as effective.

When a token economy is in effect, response cost may be used to eliminate the behavior. Tokens are taken away contingent upon the aggressive behavior. Tokens should be given to the child when he is not aggressing in order to maximize the effectiveness of the procedure.

Punishment in the form of shocks and slaps also are effective in elimination. However, for legal purposes these methods are seldom used.

STEREOTYPED MOTOR MOVEMENTS

The child may often engage in excessive repetitive behaviors that do not seem to be controlled by the environment. These stereotyped movements include such behaviors as swaying, twirling, rocking, and repetitive movements of arms, legs or fingers.

While not at first obvious it is clear that many of these inappropriate responses are learned just like other normal behavior. In many cases the behavior is directly controlled by reinforcement--for example--people often reinforce children who rock excessively or twirl about, by paying attention to them. Whether the attention is in the form of affection or a reprimand it almost always functions as a reinforcer.

It is not enough to simply not pay attention to these abnormal behaviors. You must systematically control other reinforcers which may follow the behavior. For example--if you are about to take a child outside to play do not do this either during or immediately after occurrences of bizarre behavior.

If the above analysis holds true, the most effective procedure that can be used is the DRO procedure. When the child is not engaging in stereotyped motor movements reinforce him. Also you must remember to never attend to or reinforce the child while he is engaging in these movements. If you find that the behavior does not decrease, you should then use a time-out procedure in conjunction with the DRO procedure. The child should be placed immediately in the timeout area when he engages in the behavior and removed only when he is not engaging in the behavior.

Remember--telling the child to "stop rocking" is a form of attention and is probably functioning to reinforce the rocking behavior.

SELF-ABUSE

Self-abusive behavior may be divided into two classes according to the severity of the abusive acts. In most cases of self-abuse, the child will not sustain injury but is usually stopped so he will not continue and possibly hurt himself. This type of interaction will later be shown to perpetuate and possibly increase the incidence of self-abusive type behavior. Examples of this first case is the child who slaps his face, pulls his hair, rolls on floor without regard for nearby objects, bites fingers or hands, etc.

The second type of abusive behavior is an exaggerated form of the first type, which is more severe. If left alone the child may inflict injury to his person. Cases of this type have been reported in which the child has bitten off a piece of his shoulder, incurred visual abnormalities due to repeated slaps to the face, etc.

This latter type needs to be dealt with on an individual prescriptive basis by a professional. Many approaches such as extinction, which take time before effects are seen are not the best possible approach since the child may injure himself. The most effective procedure used has been response contingent electric shock. Shock is novel to the child (a different kind of pain), the intensity can be varied allowing aversiveness to be regulated. There are restrictions which do not allow this type of treatment to be used to its fullest extent.

Lesser forms of abusive behavior (first case described) where actual physical injury would probably not occur, have been successfully dealt with using a variety of procedures. Some approaches that have been successful are listed below.

(1) The extinction approach involves eliminating reinforcement for engaging in self-abusive behavior. All forms of attention are with held, and other children are not allowed to interact with him as long as he is engaging in self-abusive behavior. The behavior may increase in frequency when the extinction procedure is first initiated, but it will eventually be eliminated. The difficulties in carrying out the extinction procedure are that all people involved have to be consistent and never attend to the self-abusive behavior, the frequency of abusive acts may increase in frequency and people discontinue the procedure too soon.

(2) A modification of the extinction procedure is time-out, the child is placed in a room or in a corner so as to bodily remove him from the reinforcing environment. This has the additional benefit of not allowing the child to come into contact with reinforcement since he is forced to be alone. If the child is removed from a reinforcing environment and is not reinforced while being taken to or from the time out room,

the frequency of self-abusive behavior will decrease faster than when extinction alone is used. The procedure is ineffective when the environment that he is being removed from is not reinforcing or if he receives attention while being taken to or from time out.

(3) A DRO procedure has been utilized to decrease the incidence of self-abusive behaviors. Behaviors other than abusive behaviors are reinforced and all abusive responses are not attended to or put on extinction. This procedure is used in conjunction with simple extinction and offers one of the more widely used approaches to eliminate a selected class of behaviors, and to increase a more acceptable behavior pattern.

TOKEN ECONOMIES

In essence a token economy is a contingency management system in which individuals receive tokens contingent upon their engaging in appropriate behavior. Inappropriate behavior is ignored or is punished by the removal of tokens contingent upon the behavior. Contingency management systems are called token economies because they use some type of generalized reinforcer: the individual may exchange those generalized reinforcers for any of a variety of other reinforcers called "back-up" reinforcers. (Back-up reinforcers are just that--they are all of the primary and conditioned reinforcers that are valuable to an individual.)

Just as we must have money in the bank to cover checks that we write, a token system must have something of value for which the token may be exchanged. A token economy cannot survive unless there is some variety of back-up reinforcers, since the tokens are generally reinforcing only because of what they can be exchanged for.

A token economy system is effective. There are empirical data that show that an institutionalized person that has received treatment on a token economy ward is more likely to be released from the institution. Furthermore, those people are more likely to remain in the community once they are released.

A token economy system is an efficient method of providing therapeutic treatment for large populations. This type of program initially requires a great deal of work in order to plan and implement the program. However, once the basic structure is established and proved effective, the details of the system can be readily altered to provide treatment for one or fifty people.

Whether one or fifty people are in the token system, the basic principles are the same. All of the attendant staff are expected to use the basic principles: reinforcement, extinction and punishment during any interaction with a patient. Variations on procedures for individuals will come with practice.

A token economy is a therapeutic, and at the same time realistic, treatment program. One of the most desirable features of a token economy is that the system approximates the outside world. The patients are required to earn privileges by behaving appropriately. As a patient moves through the levels within the system, he is expected to exhibit increasingly more adaptive, appropriate behavior for fewer tokens until he is completely removed from the economy.

A functioning token economy involves much staff cooperation and work. The therapeutic benefits derived from the system are worth the effort.

BASIC ELEMENTS OF A TOKEN ECONOMY

A. Formulation of Behavioral Objectives:

1. What behaviors need to be strengthened?

2. What behaviors need to be weakened and/or eliminated?

B. Data Collection:

1. Provides basis for program evaluation.

2. Necessary for implementation of treatment procedure.

C. Selection of reinforcing events:

1. "Natural" reinforcers -

2. "Artificial" reinforcers -

D. Medium of Exchange:

1. What type of token will be used?

E. Development of Reinforcement Contingencies:

1. Exchange ratio

2. Analysis of input and output

F. How to initially implement the program.

G. Individual Prescriptions

INTRODUCTION TO IN-HOME MANAGEMENT

A. Scarcity of Professional Personnel

	(1961 census)
1. Psychiatrists to children	3600:1
2. Psychiatrists to children	2400:1
3. Nurses and social workers to children	1500:1

B. Behavior change is impossible with such a ratio of children to professionals. Rather, it is possible for the sickest or wealthiest.

  1. One workable avenue is teaching profession where ratio is 26:1.

C. Use another group called parents. They obviously have the closest and most prolonged contact with children.

  1. If the parents are to be a basic group for behavior modification, you must be able to find out what they can do.

  2. In recent work with treating their children, many parents whose children have all types of behavior problems have successfully dealt with a wide variety of behavior problems.

These are the basic steps with which you can help parents to modify and manage the problem behaviors of their children in the home.

(1) Show parents how to precisely define or specify the behavior they want to modify (target behavior). This means that the behavior must be directly observable and described in terms which would allow a reliable identification. The parent should never need to make subjective decisions as to whether or not the target behavior occurred or not. The parents should select aspects of their children's behavior that are of concern to them; in the sense that they would like to see the rate of those behaviors increase or decrease.

(2) Teach parents how to record its frequency. Show the parents how to keep written records of the number of times they observed their children performing the behavioral targets, and to record how much time (in minutes) they devoted to observing the behavior. Tell parents that it is important to collect data and keep records of their attempts to change behavior for at least two reasons.

First, they will be able to accurately determine the current status of the behavior problem. Second, keeping records lets them know whether they are succeeding in their attempts at changing behavior.

Teach the parents to graph data. Graphs should be devised before any modification procedure is initiated in order to get a "before" (baseline) measure. Graphing should continue to provide an "after" measure.

(3) Change the consequences of the behavior. Instruct parents that the behavior that they are attempting to change is greatly influenced by its consequences.

Once the behavior problem has been selected, precisely defined and a baseline measure recorded--an appropriate change plan can then be initiated.

(4) Try, Try, Again. Once a parent initiates a change plan with your help, the continuous, daily behavior records provide the parent with immediate information regarding the success or failure of the change plan. If, after a week or so, the parents observe little change in the recorded rate, request the parents to devise a new change plan and to "try, try, again."

OBJECTIVES IN COUNSELING
PARENTS OF RETARDED CHILDREN

1. Try to dispel ideas that their children are permanently limited in their behavioral potential.

2. Stress through examples the success of others who have used behavior management principles.

3. Try to overcome the "Medical Model" position told them by a pediatrician and/or psychologist who tells them that their child will never learn this or that behavior skill (or that all behavioral problems can be explained by reference to the child's physical handicaps).

4. Explain to them that many labels ascribed to handicapped children are subtle devices for blaming the child for his own behavior.

5. Prepare parents for learning how to focus their attention on the behavior of their children.

6. Develop some intelligent optimism regarding the behavioral accomplishments that are possible with their children.

GROUP DISCUSSION

Step One: Defining Behavior

Define problems in behavioral terms. Your definition should be explicit enough that anyone who reads it could record the behavior without any further explanation.

E.g. A child is destructive (What is destructive?) He breaks toys.

STEP TWO: Observing and Recording

A. Parents must observe behavior each day for a specified period of time. They will particularly observe the behavior that was defined in Step One.

B. Parents must record the frequency (how many times per day does the behavior occur) or the duration (how long does the child engage in this behavior) of each behavior each day.

E.g. How many toys does the child break in a day.

E.g. How long each day does he break toys (probably not an appropriate measure for this particular behavior).

STEP THREE: Graphing

Show the parents how to portray their data (Part B of Step Four) graphically. The graph is a visual representation of ongoing behavior. Figure One is an example of a simple graph.

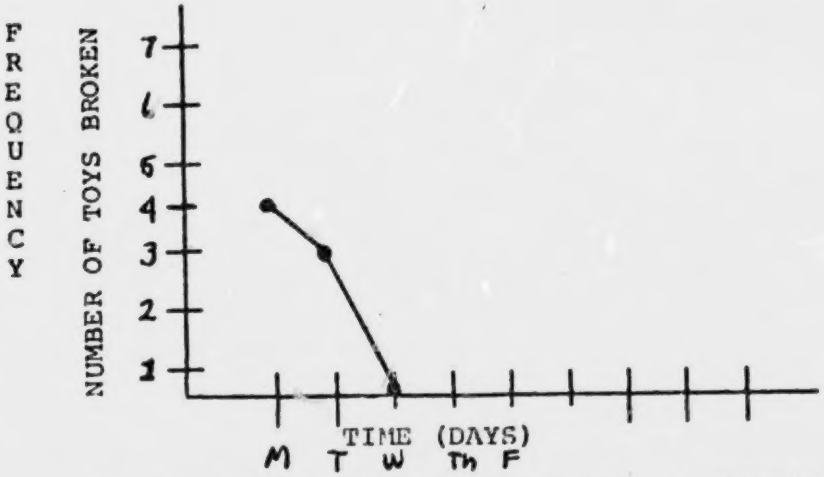


Fig. 1

E.g. On Monday John broke four toys, Tuesday three, Wednesday, none, etc.

STEP FOUR: Consequating Behavior

In order to increase or decrease behavior it must be consequated by one of the following basic procedures.

A. Reinforcement

B. Punishment

C. Extinction

Explain to the parent in explicit terms exactly what to do.

EXAMPLE ONE: The Aggressive Child

Mrs. Smith, the mother of a handicapped child, makes an appointment to see you concerning her son John. During your conversation she tells you that John is very nasty to the other two children in the family. He constantly teases them and will fight with them periodically.

STEP ONE

You ask Mrs. Smith to explain what she means by John is nasty to his brothers. She replies that John will treat them badly and does not seem to like either of them. This is still not an adequate behavioral definition so you ask her, "Exactly what is being nasty?". Mrs. Smith then says that John is jealous of the other children and seems to reject their presence. (You still do not have a behavioral definition.) You ask once more for Mrs. Smith to define exactly how John is nasty. "He throws toys at the other children," she replies. You now have a beginning of a definition. You ask how he throws them and what does she do after he throws them. Mrs. Smith tells you that whenever John is left alone with the other children he picks up a toy and throws it at one of them. She then runs into the room and explains to John that he must not do that.

From this meeting you have a behavioral definition which you can begin observing. The definition is--a picking up of a toy or any object and then moving an arm in such a manner as to throw the toy towards some person in the room.

STEP TWO

You must now instruct Mrs. Smith on how to observe and record John's throwing behavior. You both decide that the best time to observe this behavior is from 10:00 to 10:30 in the morning. Mrs. Smith is to place herself out of John's view and count the number of times that John throws a toy (using the Step One definition). Mrs. Smith is instructed to react to John's throwing as she usually does. You ask her to record exactly how she responds to John. After two weeks Mrs. Smith brings you the following.

DAY	NUMBER OF TOYS THROWN	PARENTAL REACTION
Monday	6	Reprimanded John each time.
Tuesday	-	
Wednesday	-	
Thursday	5	Reprimanded John four times.
Friday	-	
Saturday	-	
Sunday	-	
Monday	4	Left John Alone.
Tuesday	-	

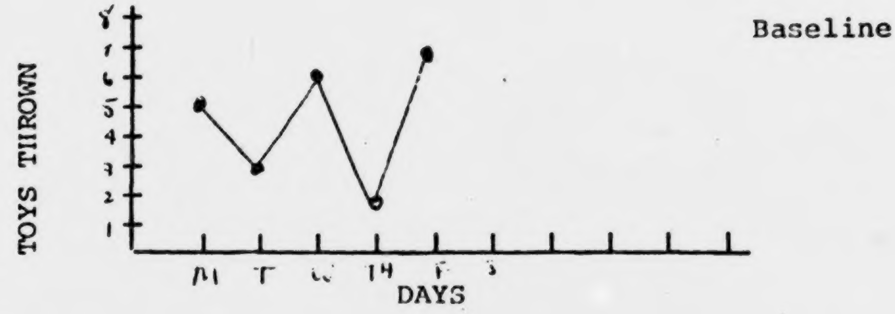
You now must explain to Mrs. Smith that three days out of fourteen is just not enough data for the two of you to work with. She gives you three or four excuses for not observing John, but you are such a good behavior modifier that you stick to your guns. You explain the value of data once again and send Mrs. Smith home to gather more data.

Mrs. Smith returns with the following data.

DAY	NUMBER OF TOYS THROWN	PARENTAL REACTION
Monday	5	Went into John each time.
Tuesday	3	Went in once.
Wednesday	6	Went in each time.
Thursday	2	Left John alone.
Friday	7	Went in four times.

After conferring with the parents, you decide to use a punishment procedure since extinction might be hazardous for the other two boys in the household. Mrs. Smith agrees to use time-out with John. Each time John throws a toy Mrs. Smith enters the room and places John in his own room. (There is nothing in John's room but his bed.) He is left there for 10 minutes. Mrs. Smith returns and if John is quiet she allows him to leave. She does not pay any attention to John as she places him in his room or when she takes him out.

The data is recorded on the graph and looks like this:



Do you have any alternate ideas to the above (hint = DRO).

What do you do if the time-out procedure is ineffective in decreasing the behavior?

BEHAVIORAL TERMINOLOGY

1.	Behavior	Everything that a person does that can be observed.
2.	Behavior Modification	A systematic approach for altering a person's behavior by the use of environmental programming.
3.	Consequence	An environmental event which closely follows a response.
4.	Contingency	The response produces the consequence. (Refer to Reinforcement: Contingent.)
5.	Positive Reinforcement	The process of presenting an object or event, contingent on a response which results in the increased probability of that response.
6.	Types of Reinforcers:	
	a. Primary (unlearned) Reinforcer	A stimulus or event which, reinforces behavior without the organism's having had any particular previous experience with it - such as food or water.
	b. Conditioned (learned) Reinforcers	An object and or event after being paired with a primary reinforcer, acquires the ability itself to reinforce responses.
	c. Generalized Reinforcer	A reinforcer which allows access to more than one other reinforcer. It can be an effective reinforcer in more than one state of deprivation. E.g. a token that can be exchanged for candy, toys, play time, pop, etc. is a good example of a generalized reinforcer since it will be effective even if the child has just eaten, just played, etc.
	d. Accidental Reinforcement	A situation in which a reinforcing event follows a response by coincidence E.G: A man is allowed to go to dinner immediately after bizarre verbal behavior. The reinforcing event (being allowed to go to dinner) happens to occur after the behavior but not because of the behavior.

7. Schedules of Reinforcement	
a. Continuous Reinforcement	The presentation of a reinforcer immediately after *each* occurrence of a specified response. E.g. If you talk to a man *every* time he comes to the nurses' station, coming to the nurses' station is continuously reinforced.
b. Intermittent Reinforcement	Any schedule of reinforcement in which some, but not every occurrence of specific behavior is reinforced. E.g. You may require that a certain number of responses occur before presenting a reinforcer, such as reinforcing a man after every ten jumping jacks. The schedule may also be arranged so that a certain period of time must elapse before a response can be reinforced, such as observing a man every ten minutes, and reinforcing him if he is working.
c. DRO	Differential Reinforcement of Other Behavior. In this schedule, reinforcement is delivered only if the organism is *not* emitting a defined behavior. This schedule specifies what will *not* be reinforced, rather than what *will* be reinforced. E.g. If you wish to eliminate aggressive behavior you would never reinforce its occurrence, but other appropriate social behaviors which are incompatible with aggression would be reinforced.
8. Differential Reinforcement	The process of reinforcing one response and not reinforcing other types of responses. E.g. If a man is asked what his name is, he will be reinforced only if he states his name and will not be reinforced if he says or does anything different.
9. Delay of Reinforcement	The interval of time between the emission of a given response and the delivery of a reinforcer for that response.
10. Superstitious Behavior	Behavior which is acquired and maintained by accidental reinforcement.
11. Extinction	The procedure of withholding of reinforcement for a response which was

	Extinction (Cont.)	previously reinforced resulting in a decrease in the frequency of that response. E.g. Consider the man who was given a great deal of attention (the reinforcer) each time he kicked a chair. When using the extinction procedure, he would no longer be reinforced for this behavior and it should gradually occur less often.
12.	Punishment	The presentation of a stimulus or event, contingent upon a response, which results in a decreased probability of that response.
	a. Punisher	A stimulus or event, which, when presented contingent upon a response, results in the decreased probability of that response.
	b. To punish	The process of presenting a punisher.
13.	Response Cost	Response-contingent removal of a positive reinforcer. This is a type of punisher which requires the removal of a reinforcer contingent on a response.
14.	Shaping	Differential reinforcement of successive approximations to a terminal behavior.
15.	Successive Approximations:	Successive approximations is a method in which a terminal behavior is separated into smaller units. Each of those units is then treated as a step in a series of steps which will result in the terminal behavior.
16.	Terminal Behavior:	The goal of a specific treatment procedure. The terminal behavior is the behavior that the patient will engage in after a treatment procedure is applied. A terminal behavior is usually broken down into smaller units (successive approximations) and each of those units is taught in sequence. A terminal behavior often requires that a person be able to engage in a complex sequence of responses.

17.	Fading	A gradual change in a stimulus which results in a transfer of stimulus control from one stimulus to another or from one dimension of a stimulus to another. In the fading procedure, the terminal response is maintained, but the stimulus which precedes the response is gradually changed. (Refer to Fading: Specific Applications)
18.	Imitation	Responding which is physically similar to that of a model.
19.	Deprivation	An environmental operation in which a specific object or event is withheld, so that it will later serve as a reinforcer.
20.	Satiation	A procedure by which the effectiveness of a particular reinforcer is decreased due to unlimited access to that reinforcer. For example, if the television is on all of the time, it will probably not serve as a very effective reinforcer.
21.	Stimulus Control	The control that a stimulus situation exerts over whether responses will occur. E.g. Most people wait at the corner when there is a red stoplight, and then cross the street when the light turns green. Those people are under the stimulus control of the stoplight.
	a. Generalization	A situation in which responding not only occurs during the training situation but also in other situations which share characteristics of the training condition. E.g. A young child learns to say the word "Daddy". Often, the child will call any and all male persons "Daddy". The child has generalized the training situation of learning to say "Daddy" to a particular person to a number of other, similar persons. (See Discrimination)

	b. Discrimination	When a person responds in one situation and does not respond in other situations. If a person is reinforced for responding in one situation, the rate of that response increases; if he is not reinforced in a second situation, responding decreases - the person is said to have formed a discrimination. (See Generalization) If the child who previously said, "Daddy" upon seeing any male person, now refers only to his father as "Daddy", the child has formed a discrimination between his father and all other male persons.
22.	Operant	A response which is controlled by stimulus events which occur *after* the response. E.g. A man goes down to the dining room because of the events that occur *after* he emits this behavior.
23.	Time Out	A procedure that involves placing a person in a situation which will not allow him to come into contact with any reinforcers. When time out is made contingent on a response, the frequency of that response decreases. E.g. If a man exhibits a tantrum on the ward, he might be removed to a time out room to ensure that he will not be reinforced for this behavior.

ANSWERS TO BASIC PRINCIPLES READING AND WRITING ASSIGNMENT

1. Quality and quantity, immediacy
   satiation consistency
   deprivation

2. Contingent

3. Increases (Refer to Reinforcement: Definition of)

4. All staff members would use a simple extinction procedure for Calliope's behavior. If the frequency of her behavior increases despite the systematic use of the extinction procedure, it may be that some other reinforcer is maintaining her behavior. You might therefore try a punishment procedure. Upon the next occurrence of the scream, Calliope would be removed from the dining room completely and miss that meal. Each occurrence of that behavior would be treated in this manner.

5. Reinforcer

6. Extinction (Refer to Extinction section)

7. Primary (Refer to Reinforcement)

8. Contingent (Refer to Contingent Reinforcement)

9. Place, and Person (Refer to Reinforcement)

10. Consumable or primary and social (Refer to Reinforcement)

11. (1) Since he is often wet or soiled, provide Milhouse with frequent opportunities to use the bathroom.

    (2) Reinforce Milhouse for any attempt to help himself at the toilet.

    (3) Reinforce any eliminative behavior with social attention and primary R+.

    (4) Do not leave him on the toilet for more than ten minutes, and praise him for sitting still that long.

    (5) Again, reinforce Milhouse with primary reinforcers and social attention for any attempt to help himself at the toilet.

Increase

12. ~~[illegible] (Refer to Punishment~~

13. A. Identify the reinforcers that are maintaining the behavior to be extinguished. If you do not know what is maintaining the behavior, you cannot withhold reinforcers for the behavior.

B. Control those reinforcers--i.e., be sure that those reinforcing events never follow the behavior to be extinguished.

If the behavior is ever again reinforced, the behavior will again increase, seriously limiting the effectiveness of the extinction procedure.

14. Response Cost (Refer to Response Cost - Terminology List)

15. A. Julie has been positively reinforced for an inappropriate behavior.

B. Julie has been intermittently reinforced for a very inappropriate behavior.

C. Your presence has acted as a reinforcer for inappropriate behavior.

D. Julie should be placed in time out when she has a tantrum.

(1) When a behavior such as a tantrum is reinforced intermittently it will continue to increase in frequency in the future. As long as you continue to maintain it with your attention the more likely it will be resistant to an extinction procedure. The most effective way then, to decrease tantrums would be to immediately place the child in the quiet room when tantrums occur, thereby removing the child from possible reinforcement.

16. Refer to Generalization

17. Refer to accidental reinforcement

18. Conditioned (Refer to Conditioned Reinforcement)

19. Contingency (Refer to Contingent Reinforcement)

20. John has associated your presence with forthcoming reinforcement for food smearing whereas he has probably associated the presence of the other teacher with an extinction or punishment procedure. In this example, John has discriminated that your presence means reinforcement for his objectionable behavior.

21. Time Out (Refer to Time Out - Terminology List)

22. Stimulus (Refer to Stimulus Control)

23. In extinction, the reinforcing event is no longer presented when the behavior occurs. The result is a decrease in frequency of the behavior. With punishment, an event is presented which serves to decrease the behavior.

24. Decreases

25. Many

26. Linda may not last through an entire extinction procedure. With a behavior as severe as self-abuse it is necessary to quickly eliminate the behaior for the safety of the child. Therefore, a strong punishment procedure may be used to decrease the frequency of the behavior.

27. Increase, decrease (Refer to Extinction section)